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Team Work and Conflict During Elective Procedures
in
English National Health Service Operating Theatres

Thesis submitted in partial fulfilment of the
requirements of City University London for
Degree of Doctor of Philosophy

Richard Alexander Coe

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CLARIFICATION OF TERMS AND ABBREVIATIONS

ODP	Operating department practitioner. A health care professional with specific diploma level training in operating department practice. Usually working to the same job description, terms and conditions as a nurse.
HCA	Health care assistant. A trained, but unqualified person, working under the direction of a nurse or ODP.
Scrub Nurse/ODP	A nurse or ODP who undertakes the role of scrubbing and donning sterile attire, in order to prepare sterile instruments and other requirements for surgery. The scrub nurse/ODP also participates in the surgery by ensuring that the appropriate instruments are to hand during the procedure. They may also assist the surgeon.
Circulate	To adopt the role of supplying the scrub nurse/ODP with additional equipment and supplies during surgery, and to operate certain equipment which cannot be touched by those wearing sterile attire. A variety of other work including record keeping and maintenance of a safe environment may also be undertaken.
Overrun	The period by which the operating list exceeds its allotted time.
Immediate perioperative period	The period during which the patient receives surgical intervention in the operating theatre.
Diathermy	An electro-cautery device, used to limit bleeding during surgery.
The list	Refers to the proposed work of the theatre for a particular operating session and to the document on which the names of the patients and their procedures appear.

ABSTRACT

Multidisciplinary team working has been proposed as the means by which effective service delivery and organisation can be achieved within the operating theatre. Enhanced interprofessional communication, focus on a common goal, and valuing the contributions of team members have all been identified, within the professional literature, as elements of team working through which this objective could be realised. However, equal recognition has been given to reports of conflict and aggression experienced between professional groups within operating theatres. This thesis sets out to explore the relationship between these two phenomena in the context of the operating theatre, and explains the findings in an explanatory model of operating theatre work.

The research was undertaken as a two part mixed method study. The first phase consisted of a survey of 391 operating department personnel, including surgeons, anaesthetists, nurses and operating department practitioners, employed in National Health Service operating departments in England. The survey gathered perceptions of conflict within and between staff groups, to identify the main sources of conflict, and the main protagonists.

The results of the survey demonstrated the existence of the conflict related to changes in order of the operating list, and overrunning of the allotted operating time. The main professional groups involved were senior surgeons, and the nurses and operating department practitioners. Little variation was seen within the national sample.

The second phase of the study consisted of ethnography within operating departments on two sites, supported by informal interviews with nurses, operating department practitioners, surgeons and anaesthetists. Field notes and interview data were analysed using Adaptive Theory through which new data and existing theory were utilised in an inductive process of theory generation. The findings reveal that working practices in the operating theatres did not conform fully to any existing model of team working.

This thesis proposes that the persistent emphasis on multidisciplinary team working in the policy literature derives from a functionalist analysis of conflict. At a theoretical level the persistence of conflict can be explained via an analysis of the theoretical limitations of the functionalist model. Overcoming conflict requires a critique of functionalist solutions proposed in the literature and the application of alternative theoretical perspectives more attuned to addressing the underlying tensions inherent in the organisation of theatre work.

CHAPTER ONE**INTRODUCTION**

This thesis contributes to the literature on service delivery and organisation, through a two-phase exploration of the relationship between conflict and team working in National Health Service (NHS) operating theatres. In the first phase of the study data were gathered using a nation-wide survey of NHS operating theatre personnel. This phase provided key information to the study as no similar survey to establish either the geographical spread or characteristics of conflict in English operating theatres could be discovered in the literature.

The second phase, which sought to further explore the issues raised in the survey using a micro-level ethnographic study of the experience of working in NHS operating theatres, offers a further unique contribution in the range of activity observed. Ethnography has been successfully employed as an approach to the exploration of working experience generally (Fulop *et al* 2001), and has been applied to the context of the operating theatre in previous studies (Lingard *et al* 2002a, 2004b; Moss and Xiao 2004). However, the majority of these studies have been carried out outside the United Kingdom, and have selected specific concepts of group working or interdisciplinary relationships as their focus. Although these small scale studies provide useful insight, they fail to capture the complexity of the working process of the operating theatre.

The qualitative data were analysed using Layder's (1998) Adaptive Theory. This approach was chosen because it allows theory to emerge from the data following the principles of Grounded Theory (Strauss and Corbin 1990), whilst admitting the inclusion of existing knowledge and theory to the process of analysis. Whilst this approach lends itself to the exploratory nature of this investigation, such methodological innovation has fuelled many well-rehearsed academic debates regarding the place of previous theory in qualitative studies, and careful attention is given to these debates in the Methodology Chapter. Recent literature, presents

persuasive arguments in favour of allowing fitness for purpose to guide methodological choice over purely academic considerations (Mason 2006), and full discussion of these debates is included within the chapter.

The findings of this study informed the construction of a descriptive model of group working in the operating theatre. This model proposes that the structure of the operating theatre team is more closely aligned to the airline crew model, than to industrial models of team working. The model presented is used to argue the specific problems related to the short-term nature of the team.

- 1.1 The central focus of this thesis evolved from an initial interest in conflict in the operating theatre, arising from personal experience and confirmation in the literature (Timmons and Tanner 2004; Sexton *et al* 2000). However, in preliminary reading it became apparent that the operating theatre is also regarded as a prime example of team working, and that team working has been advocated in this specific area over a considerable period (Lewin 1970; Bevan 1989; NHS Modernisation Agency 2001, 2002). Government and other official bodies have seen team working in theatres as the means of optimising the collaboration of professionally diverse groups, who had previously been separated by a more rigid hierarchy, and as a way of organising improved service delivery to patients. The potential benefits of team working generally, in terms of cultural cohesion, group motivation, efficient working practice and improved focus on organisational goals, can be seen in sociology (Carletta *et al* 1998), healthcare (Sigurdsson 2001), and management literature (Gorman 1998). However, a concurrent literature can also be found which describes conflict and disagreement between the professional groups in the operating theatre (Dunn 2003), and its negative contribution to efficiency (Undre *et al* 2006), motivation (Davies 1989), safety (Silen-Lipponen *et al* 2005), communication (Lingard *et al* 2004a) and behaviours associated with stress in the work place (Morgan 1997).

The conflict described in the literature, and the findings of this study demonstrate the lack of change in the situation over a considerable period.

The findings presented within this thesis indicate that managers and policy makers in the NHS have maintained a perspective which draws heavily on the concepts of functionalism. The approaches to conflict resolution have sought to improve multiprofessional team working in many areas including the operating theatre, in order to meet the perceived needs of the systems and subsystems of the health service in general. However, it could be argued that the constant process of role redesign set out over decades of centrally imposed policy and guidance has, in line with functionalist principles, paid insufficient attention to the underlying causes of the conflict which has been so widely reported. Instead, solutions to the recognised problems of multidisciplinary working, sought through process redesign, has left causal issues unexplored and maintained the *status quo* within reorganised services.

- 1.2 Although the methodology and theoretical perspective adopted in this thesis shape the collected data, it is also recognised that the researcher's own personal and intellectual biases must exert an influence on problem identification, choice of theoretical perspective, data collection and analysis (Mays and Pope 2000). Details of the researcher's prior assumptions and experience must, according to Mays and Pope, be made explicit at the outset, of any qualitative work in order to enhance the credibility of the findings. In the present study, the researcher is a forty five year old male, and a registered nurse with over twenty years of experience in operating theatre nursing. The researcher's background had a direct influence on the identification of the central focus of the thesis and the initial choice of questions through which this was addressed. It was also influential in field delineation, and field note recording. In order to formally recognise prior assumptions and presuppositions, on the part of the researcher a personal research diary was maintained, in which personal reactions during periods of observation were recorded. An anonymised section of the research diary is presented as appendix 1.

- 1.3 This thesis set out to explore the reported co-existence of team working and conflict in the operating theatre in the UK, and its effects on service

delivery and organisation, and to address the following specific research questions:

- a) How does conflict impact on the work of the Operating Department team?
- b) How does work within the Operating Department fit with models of team work?

These questions were addressed through the design of a two part study, carried out in consecutive phases. The first phase of this study consisted of a national survey of 391 operating department personnel, including surgeons, anaesthetists, nurses and operating department practitioners (ODPs), designed to gather perceptions of conflict, regarding management issues, within and between staff groups working within the operating theatre.

The results of the survey demonstrated the existence of conflict within the sample. The conflict mainly related to changes in the order of the operating list, and overrunning of the allotted operating time. The main professional groups involved were shown to be senior surgeons, and nurses and ODPs. Little variation was seen within the national sample.

For the second phase, an ethnographic study was undertaken, which enabled, through observation and informal interview, an adequate description of the work of the operating theatre at the point of delivery of surgical intervention. It also considered the relevance of team working models to this description and identified the antecedents of conflict found in the results of the survey.

1.4 *The contribution of this study to service delivery and organisation*

Team performance has been identified as the foundation to care in the operating theatre, and as a key determinant of good surgical outcomes (Sigurdsson 2001; Healey *et al* 2006). It is also considered essential to safe and efficient work in complex high risk clinical environments (Helmreich and Foushee 1993; Sasou and Reason 1999). With this in

mind team work has been promoted through government and professional bodies, as the way forward in improving safety and efficiency in the operating theatre. However, although much has been written about team working, in the organisational setting, and about multidisciplinary team working in the wider setting of the NHS, this has proved to be inadequate to capture the complexity of the work of the operating theatre, and to date, no appropriate organisational model could be identified. The existence of conflict between professional groups in the healthcare setting, has been identified in the literature (Farrel 1999; Simms 2000; Lewis 2001; O'Garr 2004), and particular attention has been paid to the working relationships between doctors and nurses (Strauss *et al* 1985; Wicks 1998; Walby *et al* 1994). However, despite recognition that conflict exists in the operating theatre (Astbury 1988; Davies 1989; Morgan 1997; Mardell 1998), and that within that environment it can contribute to a breakdown of team working (Pape 1999), much of the literature on this topic is anecdotal, small scale and originates outside the United Kingdom.

The need for research in this specific field has been identified on a national and international level, and has been a focus of attention for official bodies in the UK for many years (Lewin 1970; Association of Anaesthetists of Great Britain and Ireland 2003). The main concern of these bodies has been the perceived need for improvements in patient safety, and efficiency of service organisation and delivery in NHS operating theatres. Recent government initiatives to increase patient flow through UK operating theatres in an attempt to reduce waiting times such as the 'The Productive Operating Theatre (NHS Institute for Innovation and Improvement 2008), coupled with a dwindling workforce have made the need for further exploration of theatre working practice all the more urgent.

1.5 *State of current knowledge*

Problems related to inter professional conflict and the efficient service delivery in theatres have been recognised in official reports since the Lewin Report (1970). This, and subsequent reports (Audit Commission

2002, 2003; NHS Modernisation Agency 2002; National Confidential Enquiry into Perioperative Deaths 1997, 2002), have broadly recommended improvements in communication and management strategy and yet there is a particular lack of empirical evidence to suggest successful implementation.

Much of the key research into operating theatre team activity has been either from a sociological perspective (Fox 1992; Strauss *et al* 1985; Helmreich and Schaefer 1994) or from surveys (Dunn 2003; Kaye 1996; Davies 1989). The work of Lingard *et al* (2002a) was pioneering in its use of an ethnographic approach. Whilst affording valuable insight into surgical team relationships in the Canadian healthcare setting, the work focused on communication. Lingard's subsequent work (Lingard *et al* 2004a) has added to earlier accounts of communication failure. However, despite extensive observation, Lingard in the majority of cases only observed the first two hours of surgery. In the present study the entire list was observed on each occasion in order to capture interaction before and after the actual episode of surgery, when list overrun and list change disputes may be expected to occur.

Studies, from the United States have used qualitative approaches to examine the work of the operating theatre in terms of organisation (Lingard *et al* 2002a; Moss and Xiao 2004; Lingard *et al* 2004a). These studies describe management and organisational arrangements which differ markedly from those reported in the UK. Indeed, there is evidence to suggest that the work of UK operating theatres has eluded description even by those who work there (Undre *et al* 2006). An argument can therefore be made that studies of operating theatre management from the United States may not offer useful insight into theatre management in the UK. This will be discussed in more detail in the literature review chapter.

1.6 *Previous approaches*

In order to explore the reported conflict in the specific setting of UK NHS operating theatres (Astbury 1988; Davies 1989; Mardell 1998; Timmons

and Tanner 2004), it was first necessary to establish its existence, geographical spread and prevalence, and the main protagonists and causes. In order to gather data from a large and wide spread sample a questionnaire survey was designed and conducted. The content of the questionnaire was informed by the literature and by a focus group of experienced theatre staff. The strengths and limitations of this approach are recognised and fully discussed in the Methodology Chapter. The results of the survey provided key information, which was absent from the literature, and which informed the design of the second phase of the study, which took the form of an ethnographic study of daily working in the theatres of two UK operating departments.

The micro-level ethnography used in this thesis has been advocated as an appropriate approach to the exploration of areas of service delivery and organisation (Fulop *et al* 2001), and enables the researcher to gather rich data on specific aspects of the daily work of health professionals. It has been suggested that the whole organisation must be taken into account to answer these types of question. However whilst it is true that the workings of the greater organisation impact on the operating theatre, the operating theatre can also act as a 'brake' to the surgical side of the hospital. Therefore the particular contribution of this thesis is to consider the immediate delivery of surgery to the patient in the micro-level.

1.7 *An overview of the main results*

The main results of the study are fully described in Chapters Five and Six, but can be summarised as follows: Conflict in the operating theatres was found to be widespread and with little variation across the survey sample. The issues around which conflict was reported to manifest, related to list management and service delivery, and were reported to occur on a daily basis. The main protagonists were identified to be surgeons and nurses.

The central cause of conflict observed in the study was failure to anticipate the needs of others between the professional groups in relation to the management of the list. In particular, the surgeons did not

anticipate the need for instruction to the nurses (or anaesthetists). The nurses did not verify what was required, (or warn surgeons that items of equipment were not available) relying instead on obsolete information. Assumptions were also made regarding the availability of personnel to remain and finish overrunning lists.

This failure of anticipation frequently led to the need to rectify situations at short notice, resulting in frustration and delay.

Communication between the professional groups although possible, was seldom initiated. Reasons for this included a perception that communication was not necessary, due to the perceived routine nature of operating theatre work. The results of the delays included, list overrun, and cancellation of patients, leading to further dispute over the accommodation of overruns or other changes to planned work.

1.8 *A brief overview of the clinical activity of the operating theatre*

In order to provide a frame of reference for the reader, an overview of the clinical activity and identification of the main personnel of the operating theatre is presented. Although the working arrangements of the operating theatre are considered to be complex (Sigurdsson 2001) and the precise nature of the contribution of individuals has proved elusive, key personnel and core activity can be described. Models which include all aspects of the work of the operating theatre, including preparation and organisation could not be found in the literature. However one model which describes the communication of the personnel during surgery is presented in the Observational Team work Assessment for Surgery (OTAS) model (Undre *et al* 2006). Although the assessment tool has been expanded to include a wider range of activity, its main purpose has been to collect quantitative data by checking the completion of pre-identified tasks. Such approaches are associated with the fields of medicine and psychology which inform the work of Undre and his colleagues. However, the preparation for cases, management of patient throughput and the rectification of unanticipated events is not accounted for in this model.

The findings of the ethnographic study described in this thesis has enabled the construction of a descriptive account of the management of a theatre list and a description of the key personnel involved. The key features of this model are presented below. The full version is presented in the Chapter Seven.

1.9 *Outline description of the management of an operating list*

An operating list is the paper representation of the number and type of surgical procedures which it has been agreed may be undertaken within a finite time allocation. The list is staffed according to agreed start and finish times for the list, and on most occasions, the staff are allocated to subsequent lists on the assumption that they will be free after a stipulated time. Failure to adhere to agreed time limits can have repercussions which affect the starting times of other lists. Failure to complete the list within the allotted time usually results in cancellation of planned surgery, which leaves the surgeon in an unenviable position of having to explain the cancellation to the patient and attempt to reschedule the case. The usual management of the operating list can be explained using the following model; According to the order of the operating list, which is compiled and submitted to the theatre by the surgeons, the patient is sent for by the theatre staff. The patient is conveyed from the ward to the anaesthetic room. This is a small room adjoining the theatre in which the anaesthetist, and the nurse or ODP acting as their assistant, check the patient's details and administer the anaesthetic.

Once the patient is anaesthetised, they are brought into the operating theatre and transferred from the trolley on which they were anaesthetised to the operating table.

Whilst the patient has been receiving their anaesthetic, nurses and ODPs, prepare the theatre for the specific operation. Usually three persons undertake this work, which includes safety and equipment checks and the preparation of sterile instruments and supplies for the case. One nurse or

ODP will scrub, and don sterile gown and gloves in order to prepare the sterile instruments and act as assistant to the surgeon. The surgeons, usually two, also don sterile gown and gloves in preparation for the surgical procedure. Once the patient is securely positioned on the operating table, the 'sterile' members of staff approach the table and prepare the patient for surgery. This generally involves the application of antiseptic solutions, followed by sterile draping in order to form a sterile field in which the surgery can be performed. The surgery is performed by the surgeon, usually assisted by another surgeon. The scrub nurse or ODP then assists the surgeons by preparing and handing out sterile instruments and other sterile items. This role also includes counting and keeping track of all sterile items used during the procedure, and ensuring that nothing is left behind in the patient or the theatre at the end of the case.

Once the surgery is complete, the surgeons retire to write operation notes, and the nursing and ODP staff clear away items used for that case, and prepare for the next case in the same manner as the first. When the anaesthetist is satisfied with the patient's condition, the patient is transferred to a recovery room where they are cared for by another group of nurses, until sufficiently recovered to return to the ward.

The above is a highly simplified description of activity in an operating theatre, and considerable variation can be seen according to the type of case, the type of anaesthetic and the nature and urgency of the surgery.

1.10 *Summary of the key literature and its contribution to the study*

A full review of the literature is presented in Chapter Two. However, in order to clarify the theoretical context, and to signpost the structure of the thesis an overview of the literature is presented here.

Interdisciplinary tensions have long been a feature of healthcare provision in the NHS, and the introduction of team working in the 1970s was intended as a means of addressing this through improving accountability,

budgetary control and the introduction of a new flattened hierarchy to end medical dominance (Coombs 2004). The concept of team working as a means of improving collaboration between the disciplines has remained a prominent feature of health service planning ever since, with the operating theatre singled out as an area which would particularly benefit from its implementation (Gorman 1998; Sigurdsson 2001; The Association of Anaesthetists of Great Britain and Ireland 2003).

Confusion regarding the labelling of teams is highlighted within the literature (Leathard 1994) as descriptions such as team, group, and the prefixes interdisciplinary and multidisciplinary are used interchangeably. In order for members to enjoy the benefits which have been associated with a sense of belonging to a team, as described by Maslow (1943) and Homans (1951), they must first be able to recognise their working arrangement as a team. However, any such recognition is hindered by contention regarding distinctions between teams and work groups (Guzzo 1986; Campion *et al* 1993; Mannion *et al* 1996; Cartwright 2000). Attempts have been made to overcome confusion over the required properties of a team, by identifying the most commonly described concepts of team working. An example in the case of nursing is supplied by Firth-Cozens (1998) who identifies the key concepts of multidisciplinary working in that field, specifically: clear goals and objectives, clear accountability and authority, diversity of skills and personalities, clear individual roles for members, shared tasks, regular internal formal and informal communication, full participation by members, reflexivity, diversity, the confronting of conflict, monitoring of team objectives, feedback to individuals, feedback on team performance, outside recognition of a team, two way external communication, and team rewards.

In addition to the benefits originally perceived by NHS planners, which largely focussed on alteration to traditional management structures, there was much to recommend team working from a sociological point of view. The classic work of Roethlisberger and Dixon (1939) laid important

ground work relating to the importance of meeting psychological and social needs within the workforce as an aid to efficiency, productivity, motivation and adherence to corporate goals. However, instead of pursuing the concerns of individuals relating to their own motivations or role tensions with the organisation, the analysis focused on the consequences of group action and the needs of the system, thus paving the way for functionalist approaches to organisational analysis which, it could be argued, survive in NHS organisational strategy to the present day. The legacy of this perspective is discussed in Chapter Seven. Later work by Homans (1951) identified key elements of group working, particularly regarding the evolution of rules and dominant attitudes. Homan's work on communications within work groups has influenced more recent studies including that of Carletta *et al* (1998) on the effect of hierarchical distancing as a barrier to effective work communication. This work relates directly to the current study which seeks to explore the working arrangements of professionally diverse groups.

The government and local guidance on operating theatre working, frequently refers to multidisciplinary team work. Once again concrete definition of this term is not to be found in the literature, and within healthcare provision, appears to be dependent on context. Government focus on multidisciplinary working is challenged by Hudson (2002) who argues that it is based on an assumption that simply placing traditionally segregated groups into a structure, with the expectation that they will become one homogenous group, defies established sociological wisdom regarding the self-interested nature of professional groups.

These arguments are particularly germane to the present study in which diverse professional groups are juxtaposed with just such an assumption.

1.10.1 *Conflict*

Close team working has been identified as a contributory factor to conflict by Pape (1999), who also associates unresolved conflict with reduced collaboration and a breakdown in communication. Although conflict is to

be expected in any organisation (Wallace 1978; Ovreteviet 1996), particular types of conflict are considered to be detrimental to collaborative working, particularly those which inhibit interaction (Dunn 2003; Duffy 1995). Dunn describes conflict between members of the nursing profession, and attributes this to the adoption of strategies, employed by the medical profession to maintain dominance, by nurses which they use against each other. This behaviour was also identified in the operating theatre by Blakeley *et al* (1996) and by Hamlin (2000).

Not only has conflict been found to have the immediate effects described above, in relation to reduced communication and collaboration, but also longer term effects. Davies (1989) found operating theatre staff to be apathetic, isolated and expressing inability to cope with their work. They also exhibited an avoidance of responsibility. Similar findings were reported in the classic work of Menzies Lyth (1988), who, in discussion of the reactions of nursing staff to conflict and anxiety, also noted a reduced sense of responsibility, along with the undertaking of low level tasks, which could have been allocated to juniors, by senior nursing staff. Menzies Lyth (1998), in her classic work on the effects of anxiety in institutions, was also struck by the lack of responsibility for decisions by nursing staff, and by the excessive use of checklists. Nurses of all grades were seen in consultation with staff of any grade senior or junior, during decision making as a method of spreading responsibility.

Communication occupies a position of priority in the conceptual frameworks of team working. Taylor and Campbell (1999) identified the requirement for feedback as part of effective communication, along with clarification and reinforcement, to ensure the successful imparting of information, and in order to assess understanding. Moss and Xiao (2004) in their observational study of communication patterns in United States operating theatres, blamed the high degree of interruptions and multitasking among nursing staff for poor quality of communications in theatre. The picture generated by Moss and Xiao's findings is one of chaotic working conditions, and yet they identified the role of the

operating theatre senior nurse to be ‘articulation work’ as described by Strauss *et al* (1985) which includes; coordinating, meshing and integrating the various contributions of the professional groups. In the UK, the precise nature of theatre work has proved difficult to describe, even by those most closely involved Undre *et al* (2006), and the results of official audit (Audit Commission 2002, 2003) have highlighted the need for improvement in interprofessional communication, and general management of the operating list. Such recommendations have remained constant from The Lewin Report (1970) to the report of The Audit Commission (2003).

That the operating theatre is a stressful environment in which to work has been widely acknowledged (Simms 2000; Lewis 2001; O’Garr 2004). The sources of stress have been considered to include unpredictable working hours, poor arrangement of operating lists, poor management strategy, increased technical complexity of surgery. However, what is not clarified in the literature, is how these states and events become stressful to those involved. Their similarity to causes of conflict previously described, raise the question of whether conflict provides the link between these states and the reported stress. Consideration of the literature on stress in the operating theatre is therefore included within the literature review for the present study.

As a conclusion to this introductory chapter, an overview of the chapters is presented, in order to signpost the structure of the thesis for the reader.

1.11 *An overview of the chapters and structure of the thesis*

Chapter Two provides a detailed discussion of the literature on team working including the early work of sociologists, its conceptualisation and application in industry, its introduction as a means of organising and delivering healthcare, and evaluation of its success in that context. Models of team working are reviewed and their application to the operating theatre are considered. The chapter highlights the lack of evidence available from which to evaluate the possibility of a relationship

between the interaction of the staff in the organisation of their work in the operating theatre, and the conflict which is also reported to exist in that context. The literature and evidence base surrounding conflict in healthcare in general, and the operating theatre in particular, is therefore also critically evaluated in this chapter. A review of the international literature reveals the spread of conflict in operating theatres, although there is little consensus on its causes and antecedents. These gaps in the knowledge base relating to the experience of working in the operating theatre, led to the formulation of the central question of this thesis which describes the scale of perceived conflict in the operating theatre and then explores its relationship to observed working practices.

Chapter Three provides an account of the practical methods used to obtain the required data. A full description of the planning and design of the Phase One postal survey is presented, including the organisation and management of a focus group to assist in the formulation of the content. The recruitment of the sample is then described along with the testing, piloting, and subsequent administration of the questionnaires. The process of obtaining ethical approval for the both phases of the study is explained and measures adopted in order to comply are described. The practicalities of obtaining access to the traditionally closed world of the operating theatre, were facilitated by the researcher's background. However, a number of formal processes had still to be negotiated. These are described in the second part of the chapter which also addresses the practical problems associated with producing data as a minimally-participant observer (Gold 1958). The chapter continues with an account of the considerations of field identification, note taking, and the particular problems encountered by the 'insider' researcher.

Chapter Four describes the methodology chosen to address the research questions of the thesis. A mixed method approach was adopted, incorporating an initial quantitative survey, which subsequently informed an ethnographic study of working practices in the operating theatre. The methodology chapter rehearses the academic debates surrounding the use

of mixed methods research designs, and aligns itself to current arguments in favour of pursuing the most practicable means of obtaining the data required to address the questions at hand. At the same time the chapter also accepts the requirement for an overarching theoretical structure to support the production and analysis of data. Concepts of team working applied to health care delivery provided the theoretical framework for the present study. The identification and resolution of potential ethical problems connected with the methods selected for this approach are also described.

Chapter Five presents the results of the survey which constitutes the first phase of the study. The chapter opens with a description of the sample, and the responses obtained, followed by an analysis of the data. The limitations of the survey are described and discussed. The results of this phase of the study provide a response to the initial research questions of the study, and demonstrate the occurrence of conflict on a daily basis across the sample. These results provide an indication of the scope and potential value of the research on a wider scale. Identification of the main protagonists and the most frequently reported causes of conflict, contributed to the design of the second phase of the study, by helping to define the field of observation, and which participants to observe in the initial phase, prior to theoretical sampling as the study progressed.

Chapter Six The findings of the ethnographic phase of the study are presented in this chapter, which includes a description of the range of grades and professions included, in the study. The findings are illustrated with direct quotations from the field notes, and provide a detailed picture of the attitudes, perceptions and working practices of the participants.

Chapter Seven. This chapter draws together the component elements of the study, and considers the effectiveness of the research design and methodology in addressing the research questions. The contributions which this thesis makes to the literature on service delivery and organisation, and conflict and team working in the operating theatre are

defined. The findings of the study are incorporated in an explanatory model which describes how concepts of team working can be adapted to explain the work arrangements of the operating theatres observed in this study. The originality of this model consists in its inclusion of multiple concepts of team working, and its explanatory value in relating team working and conflict in the operating theatre.

Chapter Eight. This final chapter presents the conclusions which can be drawn from the study, and suggests areas for future research.

The following chapter presents a critical evaluation of the international literature drawn from healthcare, sociology and industry, which has been selected to illustrate the state of knowledge regarding conflict, team working and the specific considerations of working in the operating theatre. The chapter opens with an examination of team work from the early work of sociologists, to its introduction to service delivery and organisation in healthcare, and concludes with the central research questions of the thesis.

CHAPTER TWO

LITERATURE REVIEW

Team performance has been identified as the foundation to care in the operating theatre, and as a key determinant of good surgical outcome (Sigurdsson 2001; Healey *et al* 2004). It is also considered essential to safe and efficient work in complex high risk clinical environments (Helmreich and Foushee 1993; Sasou and Reason 1999). With this in mind, team work has been promoted through government and professional bodies as the way forward in improving safety and efficiency in the operating theatre (NHS Modernisation Agency 2001, 2002; Association of Anaesthetists of Great Britain and Ireland 2003). However, although much has been written about team working in the organisational setting and about multidisciplinary team working in the wider setting of the NHS, such conceptualisations have proved inadequate in the context of the operating theatre, and to date, no appropriate organisational model could be identified. The existence of conflict between professional groups in the healthcare setting, has been identified in the literature (Farrel 1999; Simms 2000; Lewis 2001; O'Garr 2004), and particular attention has been paid to the working relationships between doctors and nurses (Strauss *et al* 1985; Walby *et al* 1994; Wicks 1998). However, despite recognition that conflict exists in the operating theatre (Astbury 1988; Davies 1989; Morgan 1997; Mardell 1998), and that within that environment it can contribute to a breakdown of team working (Pape 1999), much of the literature on this topic is anecdotal, and originates outside the United Kingdom.

This chapter will consider the historical background to the introduction of team working in organisations, and its emergence as an area of sociological interest. The classic work of social psychologists on understanding social needs in relation to motivation will be explored, and its subsequent influence on management theory described. The nature of teams will be discussed with reference to representative models of team work, and the construction of teams for specific purposes will be

considered. Following these discussions the nature of teams in the general health care setting will be identified, including an exploration of the concept of multidisciplinary team working. With reference to that concept, individual professional philosophies of team work will be described, and general barriers to team work identified. The operating theatre as a specific context for team work will be explored, including consideration of the nature of operating theatre work, and identification of potential limitations of the concepts of team working in that specific context. The subsequent section of the chapter is devoted to the impact of conflict and stress as two specific features of operating theatre work, with reference to their effect on motivation and team work. The roles of leadership and management in teams are also explored. Finally there is a review of government strategy for improving operating theatre efficiency through team work, and consideration of evidence to support team work as an effective measure in achieving that goal.

2.1 *Search strategy*

The literature reviewed in this chapter, was located using the following search strategies; Searches of electronic data bases, including the British Nursing Index 1994 to date, CINAHL, 1982 to date, EMBASE 1974 to date, Kings Fund, 1979 to date, MEDLINE 1951 to date. Manual and electronic searches of library catalogues and reviews of journal contents lists were also undertaken. This technique was particularly useful in locating specialist professional journals published abroad, and some older sociological texts. Due to the scarcity of empirical studies relating to operating theatre working practices from the United Kingdom, studies from other countries including the United States and Australia and Canada were also included. Anecdotal literature was included relating to the subject of conflict in the theatre, and due to a lack of more scholarly works, and in order to obtain the fullest possible picture the 'grey literature' of official documents and professional guidelines was also reviewed. Key texts were identified on the basis of the empirical nature of their findings, which related specifically to team working or conflict in the operating theatre, or because they had used ethnographic methods in this

context. A table of search terms and results is included in appendix 2, and a table identifying the key literature in appendix 3.

2.2 *The association of team work and the operating theatre*

Team work was introduced into the National Health Service, as a formal concept, in the 1970s as a means of addressing the need for improved accountability, and budgetary control, and in an attempt to create a flattened management structure, which had hitherto been dominated by medicine (Coombs 2004). The concept of what is often described as multidisciplinary team work, but may be more appropriately described as multiprofessional team work, has retained its prominence in government and legislative documents as the most efficient means of holistic care delivery for the health service, since that time (National Confidential Enquiry into Perioperative Deaths, 1997, 2002; NHS Modernisation Agency 2002; Audit Commission 2002, 2003). Of the many specialist areas of care delivery, the operating theatre has been singled out as one which particularly relies on team working, from the point of view of health service management (Gorman 1998), nursing (Sigurdsson 2001), and medicine (Association of Anaesthetists of Great Britain and Ireland 2003). That the work of the operating theatre is carried out by groups of health care professionals of different disciplines is self evident. However, the extent to which their working practices fit with concepts of team work proposed in the literature, and the degree to which the specific work environment of the operating theatre can support those concepts, remains unclear. As an introduction to the discussion of the adoption of team working as a general management strategy by the NHS, and its specific adoption as a key concept in operating theatre management, the following section summarises the historical background to the emergence of team working in the workplace.

2.3 *Historical context*

The role of team work in the industrial setting came to prominence in the 1940s following the publication of the Hawthorne studies (Roethlisberger and Dickson 1939). This series of studies are considered to be the first

systematic introduction of social research to the industrial setting (Cole 1995). Prior to this, the principal focus of research, within this context, had been the physical considerations of fatigue, accidents, and the worker's response to specific working conditions.

2.3.1 *The main issues highlighted during the Hawthorne experiments*

The main findings of the Hawthorne experiments can be summarised as follows; that workers should be viewed as members of a group rather than in isolation. The effects of group membership, in terms of the status it confers, is considered to provide an incentive equal to financial or physical work conditions. The influence of unofficial groups within the work place is considerable, and appropriate recognition of such groups positively affects their response to organisational demands. Arguably, one of the most influential findings of these studies was that commitment to organisational goals is secured through the satisfaction of social and psychological needs within the workforce and that attempts to increase productivity by focusing solely on tasks is likely to be ineffective where these considerations are ignored.

The work of Roethlisberger and Dickson (1939) identified the significant contribution of social relationships in the work place, and has informed much subsequent work. Homans, in his classic work 'The Human Group' (Homans 1951), was among the first to explore the influence of informal groups as described in the Hawthorne experiments, and in so doing identified three main elements relating to the social systems of groups: Activities, or tasks performed by group members, interactions occurring between the members, and sentiments, referring to the individual and collective attitudes held within the group. Homans considered these elements to be interdependent, with a change to one affecting the other two. He also noted that over time, the process of collaboration engendered common ways of thinking within the groups, which evolved further into rules of behaviour, with dominant attitudes eventually suppressing individual thought and behaviour. The influence of early work by Homans in the field of communication in work groups can be

seen in current research, particularly in relation to the effect of hierarchical distancing as a barrier to effective work group communication (Carletta *et al* 1998). The importance of the work of Roethlisberger and Dixon (1939), Homans (1951), and Carletta *et al* (1998), lies in its revelation of the effects of group membership on the workforce, in terms of the benefits perceived by individuals, and the positive effects of groups in relation to ownership and achievement of organisational goals when social and psychological needs are met.

2.3.2 *Maslow's contribution to understanding social needs in relation to motivation*

The importance of meeting what could be considered basic human needs, in relation to motivation, provided the focus of work by Maslow (1943), in which the common needs of human beings are conceived as having a more or less hierarchical structure in terms of the order in which they must be satisfied. Although Maslow's early work has been criticised for its rigidity, and its simplification of human needs (Szilagyi and Wallace 1990; Cole 1995; George and Jones 2002), it nevertheless provides a useful summary of human requirements with some relevance to group membership. Maslow argued that meeting basic needs, such as sleep, shelter, food and clothing have a greater priority than safety and security, which is followed by a need for social affiliation and acceptance. The need for recognition and self respect, and the meeting of self-fulfilment are recognised as important, although secondary to the initial, more basic needs. Alderfer (1972), also working in the field of social psychology, whilst broadly accepting these categories, reduced them to three (existence, relatedness and growth), and preferred a continuum which permitted both forward and retrograde movement, rather than a hierarchical structure. Whittington and Evans (2005) point out, that Maslow, in his original work, also accepted that movement within his proposed hierarchy may be in both directions, depending on changes in circumstance. Notwithstanding the criticism of these theories, an argument can be presented regarding their relevance to the Hawthorne studies, in that dominant management approaches prior to the studies,

focused on physiological and security needs within the workforce leaving, according to Maslow, the steps of social affiliation and subsequent self-fulfilment to be informally addressed by the workforce themselves. Consideration of the importance of social integration and group membership, which appeared to outweigh financial security, was not generally given until their importance was demonstrated in the publication of these studies.

The key to increased productivity and better efficiency appeared to lie in the fostering of motivation in the workforce, and an interest in conceptualising motivating factors became a focus of social psychology in the 1950s and 1960s (Argyris 1957; McGregor; 1960; Likert 1961 and Herzberg 1959, 1968). This built on Maslow's (1943) work, by identifying and focussing on the higher needs within the hierarchy, including belonging, recognition and self-fulfilment. Although subsequent research using the concepts identified through the social psychological approach have been considered unconvincing, once again on the grounds of over simplification (Cole 1995), they have nevertheless been developed and applied by management in a variety of settings.

2.3.3 *The influence of management strategy on workforce motivation*

Consideration has also been given to factors outside the group which may influence motivation. The organisational psychologist Argyris, in his Imaturity-Maturity theory (Argyris 1957), seeks to explain the transition from immaturity, in terms of work ethics, to maturity, by describing developmental stages along a continuum. One conclusion reached by Argyris was, that people have a tendency to behave in an apparently lazy and unmotivated manner when treated like children by their managers. Argyris describes, in his work, the behaviour of individuals, and yet, the relevance of this work to group working can be argued, in that if the members of the work group adopt a more mature outlook, and this is adopted as the dominant group attitude as described by Homans (1951), then group effectiveness may be enhanced. The work of Argyris, which has underpinned many subsequent studies of group behaviour in

organisations (Valadares 2004), appears to make the assumption that managers treat groups as discrete units, and in so doing apply a management strategy to the group as a whole. However, it could be argued that in some circumstances managers may treat some individuals within the group differently to others, particularly where groups have a fluid membership, or where an influx of inexperienced or junior staff may require a greater degree of supervision until they can be accorded responsibility. There is a lack of clarity within the literature as to whether the position of maturity once attained is permanent, or whether it is it reliant on consistency of management approach for its maintenance. Further consideration of management style and influence will be given in subsequent sections.

2.3.4. *Theory X and Theory Y*

McGregor (1960), a contemporary of Argyris, proposed two opposing theories, which he referred to as theory X and theory Y, which are summarised in table 2.1. McGregor's (1960) theory appears to suggest that the theory Y organisation can be attained by the flattening of hierarchical management structures whilst at the same time providing a supportive leadership programme fostering group ownership of responsibility, which is further encouraged by a reward system. A clear case is made by authors of this period for the influential nature of management in the fostering of a productive workforce. Likert (1961), suggested that those managers who achieved high productivity, paid attention not only to the standard considerations of management, but also to the supportive considerations of team work, including the promotion of participative practices within teams, and categorised four systems of management found in industry at the time:

- 1 Exploitative-authoritative. Power and direction come from above: threats and punishment are employed.
- 2 Benevolent-authoritative. Top-down emphasis, but upwards consultation allowed: rewards available as well as threats.

- 3 Consultative Power and direction operate after discussion with employees: communication flows up and down: some team work and employee involvement.
- 4 Participative-group High participation, lateral as well as vertical communication, various forms of motivation encouraged.

TABLE 2.1 MAIN CONCEPTS OF THEORY X AND THEORY Y (McGregor 1960)

Theory X	Theory Y
1 Most people find work inherently distasteful	1 Work is as natural as play or rest
2 People therefore need to be coerced, controlled and directed	2 People will exercise self direction and self control when committed to objectives.
3 The average person prefers to be directed, does not want responsibility, is unambitious and seeks security above all else.	3 This commitment is a function of achievement rewards
	4 Under proper conditions people will not only accept but actively seek responsibility.
	5 The capacity to exercise imagination, ingenuity and creativity is widespread.
	6 The intellectual potential of human beings is being under utilised in industrial life

Likert found that productivity was greatest under system 4, which appears to supply the conditions under which a theory Y organisation might flourish, whilst system 1, it could be argued, would be consistent with a theory X organisation, as described by McGregor (1960).

Whittington and Evans (2005), in considering the influence of McGregor's work in current management strategy note that although many managers espouse the ideals of the theory Y approach, their treatment of workers more closely mirrors theory X. Indeed Major (2002), writing from the perspective of clinical nursing, reports that even

though Likert's assertion that effective organisations must focus on building effective work groups, remains one of the keystones of NHS workforce planning, work remains heavily regulated by rigid enforcement of job descriptions, protocols and policy, which she considers to reflect, once again a theory X orientation within the service. Effective teams are considered to perform better than uncoordinated groups of individuals by bringing the advantages of multiple skills, wider experience and group derived judgements (Mickan and Rodger 2000). However, it could be argued that any of the four management styles identified by Likert (1961) could result in co-ordination of activity, even though they may not bring group-derived judgements, multiple skills and wide experience may still be included.

2.4 *The nature of teams*

Management style has been shown to have a key influence on team working arrangements. The benefits of self-motivated teams under facilitative management in terms of flexibility and improved productivity in the industrial setting are well documented (Mohrman and Mohrman 1997; Kirkman *et al* 1999). However in order to explore the possible contributions of teams in a wider context, their defining characteristics will now be considered in a review of representative literature. Although various definitions of teams appear in the literature, common concepts can be identified, the most frequently occurring of which concern roles and communication (Pike 1991; Truman 1991; Fagin 1992; Ovretviet 1993; Goldman *et al* 1997; Birchall 1997; Jones 1997b). Representative models of teams are presented in appendix 4.

2.4.1 *Defining a team by characteristics*

The diversity of terminology used to describe groups of people who work together, has been regarded as a source of confusion (Leathard 1994). Some authors consider there to be no difference between working groups and teams (Douglas 1983), in that they are called together for the purpose of performing a task which cannot be accomplished by an individual, and that any difference between the two is a matter of the degree of

organisation. Guzzo (1986) defines the team as a group of individuals embedded in one or more larger social systems, and who are seen, by themselves and others, as a social entity, an opinion echoed by (Schein 1986), and who are interdependent due to the nature of the tasks carried out by the membership. It is this concept of interdependence, which Guzzo considers to be the defining factor between teams and groups.

A lack of consensus is seen in the literature regarding the differentiation between groups and teams as the terms are used interchangeably, although there appears to be a preference for the term 'group' in the sociological literature, and the term 'team' in the management literature (Cohen 1997).

The concept of interchangeable and overlapping roles has been considered important in defining team behaviour. Campion *et al* (1993) describe the contribution of heterogeneity in both experience and ability as advantageous to the team, with members learning from each other, resulting in flexibility and the avoidance of disturbance to planned work, due to the absence of any particular member. This, it could be argued, holds true only in those teams where skills are easily learned and shared, as in the processes of a production line. However, where skills are highly specialised, as in the operating department (Carrington 1991; McGarvey *et al* 2000), or where there are restrictions imposed by law regarding the qualifications required to undertake certain tasks as in the case of certain professional groups, this may be more difficult to realise. The specific issues of multiprofessional working will be considered in subsequent sections.

2.4.1.1. *Group size*

Mannion *et al* (1996) also recognise the contribution of complementary and overlapping skills, in order to accomplish a shared relevant purpose. However, they consider the size of the team to differentiate it from a group. Although parameters of size are not specified by Mannion *et al* (1996), Homans (1951) in his work on human groups considered that the number of members must be small enough to facilitate face to face

communication. By imposing the restriction of size, many groups in both industry and health service settings would possibly be excluded from team status. However, recent advances in communication technology may be considered to reduce the potency of Homan's rationale.

2.4.1.2 *Boundaries*

This theme is taken up by Gorman (1998), writing from the perspective of health service management, who considers the boundaries of a team, in terms of inclusion and exclusion, to confer team status as opposed to an *ad hoc* working group.

Despite a general consensus that clear and recognised membership of a team is a key concept, Cartwright (2000) argues that membership of teams can be considered in terms of a stable core, and more fluid ancillary membership. This, it could be suggested, presents an 'included' core membership, and an 'occasionally' included ancillary membership which, appears to be at odds with Gorman's (1998) definition. Cartwright (2000) also presents the idea that individuals can be members of several, possibly conflicting teams. The conflict referred to in this case is that of differing norms, or operating rules. However, the situation could be conceived of whereby conflict of goals may also pertain, particularly in the case of teams composed of otherwise segregated professional groups.

2.4.1.3 *Common objectives*

Many of the defining characteristics of the team can be seen as contributory to the achievement of a common goal. Lafasto and Larson (2001) consider the presence of a concrete and tangible goal to be the principle difference between a team and a group, a view shared by Maddux (1988), who considered that groups develop into teams when, their common purpose is understood by all members. Adair (1986), goes further in saying that an understanding of common purpose is insufficient, and that the group must achieve their desired outcome, in order to achieve team status.

As indicated above, the terms ‘team’ and ‘group’ are used interchangeably in the literature (Cohen 1997). However, some authors ascribe special defining qualities which single out the team from the group, these include: understanding of common purpose, achievement of shared objective, interdependence, specific size of membership, overlapping skills, consistency of membership, technical competence, communication skills, defined boundaries and membership.

Firth-Cozens (1998), draws on the work of Guzzo and Shea (1992), and West (1996), to present what she considers the ideal characteristics of the team:

- Ownership of a clearly defined task, which is perceived as meaningful.
- Clarity of team objectives.
- Members make a unique and meaningful contribution.
- Regular consideration and feedback regarding objectives.
- The ability to change and adapt.
- Full participation by all members.

These characteristics are presented by Firth-Cozens from the perspective of health care provision, although it could be argued that broader application could be made. In common with other models, team objectives feature prominently with her selected concepts. However, as Guzzo (1986) points out, although the team may perceive itself to be a stand-alone entity, it is also situated in a larger organisational context and as such its objectives are likely, to some extent, to be imposed by the wider organisation.

2.5 *Defining teams by purpose*

In addition to consideration of their general characteristics, teams are also conceptualised within the literature by purpose. Cohen (1997) for example, identifies four types of team:

2.5.1 *Work teams*

Work teams are, according to Cohen, work units, with a stable and continuous membership, whose function is to produce goods or provide services, usually in manufacturing and service settings. Traditionally in these groups decisions regarding what is to be done, how and by whom, have been taken by a supervisor. More recently however, the concept of self-management has been introduced, in which the above decisions are arrived at by the group themselves. The benefits of such teams are considered to be; improvement in quality and productivity, and reduction in costs (Cohen and Ledford 1994).

2.5.2 *Parallel teams*

These are composed of personnel from work areas outside a specific area, in order to perform tasks which the usual team is not equipped to deal with. They exist in parallel with the existing team, and although they usually have restricted authority, are able to advise and suggest improvement (Stein and Kanter 1980).

2.5.3 *Project teams*

Project Teams are convened for a single special purpose. Members are selected for their expertise, and are often used in the revision of services, and implementation of change. They are frequently used in industry to rapidly develop competitive working practices (Stalk and Hout 1990). These teams are similar in function to 'task forces' or temporary groups as described by Arrow, McGrath and Berdahl (2000).

2.5.4 *Management teams*

Management teams co-ordinate and direct the work of integrated sub-teams within a business. Their authority is drawn from the managerial seniority of its membership. The chief contribution of such teams is their ability to effectively draw together the efforts of disparate units thereby achieving higher overall effectiveness within organisations (Mankin *et al* 1996). A further work group which has received attention in the literature, is the crew.

2.5.5 *Crews*

Crews are also short term groups, but unlike task forces, they are not convened for a single project. They are composed of specialist personnel, assembled from a larger pool. They occupy places within a temporary team for the duration of their working shift. An example of this type of arrangement, is the airline flight crew. In order for the aircraft to operate all the team slots must be filled by persons with the appropriate training and qualifications. However they may never have worked together before, and each could be replaced at short notice by another person with matching training and experience. The parallels between air crew and surgical teams have been explored (Helmreich and Merrit 1998), particularly in cases where surgical staff need to be assembled into teams, with little prior notice, according to the contingencies of staff rostering and operating timetables. Because this system does not allow its members to become familiar with each other's qualities and work ethics, work is characteristically dominated by checklists and protocols in order to avoid omissions and oversights.

Groups can be gathered in order to perform a specific task, and although their objectives, management and degree of interaction may differ widely, they could still, by Douglas's (1983) definition, be considered teams, although their purpose in the clinical setting appears more closely related to achieving a desired outcome, than the manufacture of products.

So far, the descriptive models of teams have been drawn from industry. However, their success in that setting suggested their suitability for application in others, leading to their adoption as a change management strategy in the NHS as part of the introduction of managerialism in the 1970s.

2.6 *Introduction of managerialism in the NHS*

Initially, the model of management within the NHS saw the manager as an enabler of health care professionals toward the goal of patient care (Coombs 2004). Medicine held a powerful and influential role in determining the shape of the service, whilst management was reactive,

and directing the majority of their attention to internal organisational issues (Harrison *et al* 1994). The political and economic shift of the 1970s brought to the fore governmental concerns regarding escalating costs in the light of financial constraint and lack of resources (Elston 1991). The efficiency and effectiveness of health care provision at that time was brought into question, and the solution was sought through the introduction of a pyramidal model of management. The intention of this system was to allow policy and resources, allocated centrally, to flow down to smaller organisational units. Although meeting with some degree of success, problems were still encountered, in particular the matching of centralised funding to specific local needs (Ranade 1994), and the continued autonomy of medicine over resource allocation. The means of exerting government control over NHS spending was realised in 1979, whereby, following further restructuring, the role of managers in the NHS changed from their reactive position to one of government agency (Harrison and Pollitt 1994). One of the aims of the rearrangements of the 1970s was, therefore, to create a more flattened hierarchy which reduced medical dominance and increased accountability for expenditure, by the introduction of a team structure with clear lines of management and accountability.

2.6.1 *Teams in healthcare*

Teams in healthcare have evolved over many episodes of restructuring with the aim of better fulfilling the aims stated above, and have traditionally been associated with the organised delivery of patient care, as an organised group of workers whose roles are directly related to meeting health care needs for individuals or groups (Orem 1985). The delivery of care is managed by the co-ordination of services to meet the various and interconnected needs of clients or client groups (Maple 1987). The teams involved in this type of care provision are composed of individuals drawn from different professions, whose collaborative contribution is considered to provide holistic care (Mickan and Rodger 2000). These teams are frequently described as 'multidisciplinary', although variations on this title are to be found in the literature. The term 'multiprofessional' is arguably a

more appropriate label. However lack of agreement regarding this terminology has been the focus of academic debate outlined in the following section. Within this thesis, the terms adopted by authors are used in discussion of their work.

2.7. *Multidisciplinary team work*

The concept of multidisciplinary team work, so frequently referred to in the government literature, is far from clear (Wilson and Pirrie 2000). Terms such as 'multidisciplinary' and 'interdisciplinary' are used interchangeably in the literature. Leathard (1994) refers to the 'terminological quagmire' (p6) created by the apparently indiscriminate use of such prefixes as 'multi' and 'inter' before 'professional' and 'disciplinary', and calls for terminological clarification as a prerequisite to successful implementation. Wilson and Pirrie (2000), raise the question of the number of professions which must be present in order for a team to be considered multiprofessional. Carpenter (1995) suggests that the prefix 'inter' describes the involvement of two professions, whilst the introduction of an additional profession would constitute 'multi' professional working. A purely numerical definition has been considered insufficient by some authors, as Clark (1993) noted: simply juxtaposing groups representative of various disciplines in the workplace, cannot, of itself guarantee the development of shared understanding.

The potential effects of professional segregation on team working have lead to attempts to produce explanatory models. Satin (1994), and Frattali (1993) are among those who have considered, the issue of inter professional boundaries, in relation to care planning and common perception of goals. Satin (1994) supplies the following definitions in an attempt to clarify commonly used terminology:

2.7.1 *Unidisciplinary model*

Satin (1994) identifies the unidisciplinary model, as one in which the professional boundaries segregate clinical roles, characterised by limited

interprofessional communication, independence rather than collaboration in goal setting, and a lack of optimisation of resources. Although the term unidisciplinary is used, group arrangements pursue a common goal.

2.7.2 *The Multidisciplinary model*

The multidisciplinary model is characterised by the contribution of clinical input from several different professions (Frattali 1993). However, in common with the unidisciplinary model, professional segregation is maintained. There may be recognition of the roles and scope of practice of other members, yet shared goal setting, and a collaborative approach to care planning and provision is not a feature of the multidisciplinary model.

2.7.3 *The Interdisciplinary model*

Common patient care goals are shared by clinicians from different professions, and flexibility and role overlap are seen (Satin 1994). The educational background and role expertise of team members is acknowledged, as are the roles adopted within the team (Satin 1994). Integration of planning and implementation of care objectives involves the whole team, with frequent and continuing communication between the professions. A key characteristic of interdisciplinary team working, according to Satin, is the allocation of tasks according to competence, as opposed to professional boundaries.

The teams described by Satin (1994) vary in their degree of interaction and professional segregation. However, they are, it could be argued, in the broad sense still teams due to the presence of some elements of team concepts. There remains a lack of clarity regarding the various terms used to describe group working where more than one professional group is involved. Satin's model of interdisciplinary working, which features role overlap and integration of team objectives, appears to correspond most closely to theoretical team definitions. Satin's models describe approaches to care provision in the wider setting, where plans are laid down for the patient's entire episode of care or treatment over a period of

time. It is unclear however, as to whether these models are transferable to situations, as in the operating theatre, where healthcare professionals are brought together in a group whose composition may vary each time they meet, for an express purpose, over a short period of time.

2.8 *Perception of concepts of team work in healthcare*

According to Freeman *et al* (2000), the ideal of the effective clinical team as described in the prescriptive literature, is rarely realised. Poulton and West (1993), and Onyett *et al* (1994), however, identify the following elements as a prescription for effective multidisciplinary team working; shared vision, good communications, role understanding, and role valuing. Freeman *et al* (2000) found, that the perceptions held by individual professions, lent different meanings to these elements. Having different perceptions of team work seemed to inhibit professionals from working together effectively. Individual philosophies of team work seemed to shape perceptions of the need for shared vision, what constituted effective communication and role understanding, and how role contribution was valued. This seems to support Satin's (1994) definition of multiprofessional working.

2.9 *The influence of individual professional philosophies of team work*

Freeman *et al* (2000), were able to identify three 'philosophies' from observations made of behaviour in relation to specific aspects of teams. These individual philosophies appeared to shape the perception of the holders with regard to the need for, and meaning of concepts such as communication, or learning from team members. The work of Freeman *et al* (2000), illustrate the importance of individual perception in the potential success or otherwise of team working, and its implications for education of the workforce. They were able to categorise the philosophies under the following headings: directive, integrative and elective.

2.9.1 Directive: Most frequently held by members of the medical profession and some non-specialist nurses, this philosophy is based on an assumption

of hierarchy, where one person would take the lead by virtue of status and power, directing the actions of others. In relation to communication the leader decides what, when and how information is communicated and to whom. Lower status professions, in which nursing has been included (Evans 1997; Brennan 1999), who held this belief did not welcome it but found difficulty in challenging the roles of others. In the case of lower orders their contribution was valued in terms of its service to the higher (powerful) role rather than its intrinsic contribution to patient care. In terms of learning, those in powerful positions could learn only from peers and superiors. This could be considered to equate to Likert's (1961) Exploitative/Authoritative model.

- 2.9.2 Integrative: The integrative philosophy holds the following criteria to be integral to team working; commitment to collaborative care and therapy, and attention to acting as a team player. In addition, holders of this view recognise the importance of the establishment of negotiated role boundaries, whilst assigning equal value to each member's contribution. They also demonstrate a commitment to patient progress and to the development of professionals in the team. The complexity of communication between professional groups is recognised, but wide discussion is nevertheless encouraged with a view to better understanding of the patient's needs. Unlike those who subscribe to the directive approach, integrative team members encourage the learning of skills and the passing on of knowledge between members, regardless of their professional status. Although in healthcare, this could be seen to create problems, not only in terms of boundary maintenance but also in relation to vicarious liability and accreditation for role. This 'integrative' stance was identified most frequently in therapy and social work professions and some nursing groups. This would appear to equate to the Participative-Group, the most productive of Likert's (1961) teams, in the industrial setting.

2.9.3 Elective: The elective philosophy is a system of liaison, relating to those professionals who prefer to work autonomously referring to other professionals as and when they perceived a need. Synonymous with insularity of practice, and inhibiting shared understanding of care, the elective stance favours an attention to role clarity and distinctness, which precludes negotiation of role boundaries. There is also a belief that brevity of communication (to inform) is more appropriate than discursive interaction. Ascription to hierarchical structure, is evident within this system and learning is only accepted from peers or superiors. The beliefs of electivists result in distancing behaviours, such as general lack of participation, reduced attendance at team meetings, and withholding patient notes. Freeman *et al* (2000) point out that whilst one of the philosophies of team work above is not necessarily better than the others, the elective philosophy probably does not describe team work as envisaged in the policy literature. Thus, it can be seen that difficulties in realising the ideal of effective clinical team work have been identified in the literature and have been ascribed to a lack of common interpretation of the elements of team work held by individuals. Arguments are also presented to support the idea that particular philosophies are espoused by specific professional groups, and that these differing view points inhibit integrated approaches to team working where the professions are brought together.

2.10 *Barriers to team working performance*

Despite the large body of guidance on the organisation of effective team work, barriers to optimum team working have been identified, often related to team structure, process, or the disinclination of individuals to work in teams (Mickan and Rodger 2000). Issues of boundary identification, inappropriate leadership, and lack of task clarity, are also considered key barriers to team working (Mohrman and Mohrman 1997; West 1996).

2.10.1 *Barriers to interprofessional working*

Hudson (2002) argues that government focus on interagency working has assumed that once interagency partnership, and structures have been established, team working practices between traditionally segregated professional groups will automatically fall into place. Hudson suggests that:

'Such a belief is contrary to the established sociological wisdom that professions are essentially self-interested groupings.'

Hudson 2002 (p7)

Hudson identifies three dominant features from the sociological writing on professionalism;

2.11 *Professional identity*

The perceived intrinsic worth of identification with a specific body of knowledge, can become a valued part of the personal identity of the individual, and be the subject of special protection by the profession (Evetts 1999). Hudson suggests that the process of socialisation into professions includes the adoption of specific views and ways of thinking, which are perpetuated in both covert and overt ways and which are both encouraged and protected by the profession, as an important part of its identity. This view supports the contention of Freeman *et al* (2000) that specific philosophies of team working, outlined in the previous section, become associated with particular professional groups.

The implication for interprofessional working is, according to Hudson, that there will always be greater agreement and cohesion between members of a professional group, than between members of different professional groups.

i Professional Status

Hudson considers that interprofessional working can be inhibited by perceived differences in professional status. Despite recent attempts to

improve the professional standing of nursing through the introduction of study at a higher academic level, its categorisation as a semi-profession prevails (Evans 1997; Brennan 1999), whilst medicine has always enjoyed full professional status.

ii *Professional discretion and accountability*

In exercising professional discretion, individuals may respond to difficulties in following protocol and procedure, by taking action which they consider to be more appropriate in their professional view. In the case of the medical profession, it can be seen as problematic for those outside the profession to legitimately question action based on specialist professional knowledge.

McDonald *et al* (2005), in an observational study, supported with semi-structured interviews, in a UK hospital, explored the attitudes of consultant surgeons, consultant anaesthetists, and nurses, regarding the contribution of guidelines to safety in clinical practice. Their findings indicated a general rejection of written rules by medical staff, (n=26), who preferred to rely on their own perception of professional behaviour. Nurses, in contrast, considered adherence to guidelines to define professionalism, and were critical of the dismissive views of doctors. If it is accepted that successful team working is based on shared attitudes, beliefs and norms, then this division presents a problem.

Of all the settings in which healthcare is provided, the operating theatre could be considered to represent an environment in which professional groups are expected to work in particular proximity. In the following section, the specific context of the operating theatre as a work environment is explored, and its potential effects on team working as envisaged by theorists considered.

2.12 *Identifying the purpose of the theatre team*

The operating theatre team as a functional context has been described, in the nursing literature, as relying on effective multidisciplinary team work

(Sigurdsson 2001). However, Silen-Liponen *et al* (2005), also writing from a nursing perspective highlight the absence of a common understanding of what theatre team work is, or what nurses do as members of the theatre team.

A concise definition of the purpose of the operating theatre team, was supplied by Dixon (1976), which despite the passage of time, appears not to have been superseded by a more current description.

'The aim of the theatre team should be to enable the patient to have the operation performed by the surgeon to the best of his ability and in the safest possible surroundings.'

(Dixon 1976 p10)

Dixon's definition suggests that the purpose of the theatre team is to provide the surgeon, with the materials and assistance required for the performance of surgical interventions in a safe environment. Whilst Dixon's definition appears to put the patient as the focus of attention, it also seems to locate the surgeon externally to a team whose purpose is to provide him, or her, with the requisites for the conduct of safe surgical procedures.

2.13 *The role of the operating theatre nurse*

The role of the operating theatre nurse did not come into existence as a discrete discipline until the latter part of the nineteenth century (Clemons 2000), and has evolved to its present form following the many advances in surgery and its related technology. Today the work of the theatre nurse in the UK, although frequently described as complex, has managed to elude detailed description, and as a result the role itself remains unclear even within the profession (Carrington 1991; McGarvey *et al* 2000). In an attempt to clarify the role of the theatre nurse in the United States, the Association of Registered Perioperative Nurses, introduced the term 'perioperative nursing' (AORN 1997), which encompasses a framework of theatre nursing activity, divided into preoperative, intra operative, and

post operative care. However, the descriptions within the framework such as ‘the creative application of knowledge, skills and interpersonal competencies to provide high-quality individualised patient care’, do little, it could be argued, to clarify the precise activities which constitute their work.

An ethnographic study conducted in the UK by clinical nurses (McGarvey *et al* 2000) indicated that operating theatre nurses viewed their role in terms of functions performed. However, they experienced difficulty in articulating the precise nature of their work, broadly describing instead its complexity, and technical focus. McGarvey *et al* (2000) suggest that further research is needed in order to identify the specific contribution of operating department nursing prior to consideration of how it can be managed to produce what they describe as a positive outcome. The nature of what might constitute a positive outcome is not enlarged upon in their discussion.

Regardless of the difficulties experienced by theatre nurses in describing their work in precise terms, the location of their key contribution to the surgical episode can be explored through the ‘grey’ literature of the professional bodies. As described above, the Association of Perioperative Registered Nurses (AORN), have divided the work of the operating theatre into three categories (AORN 1997) following the patient's journey: the pre operative period, in which the patient is made ready for surgery, the intra-operative period in which the actual surgery is performed, and the post operative period, in which the patient recovers from the surgery and is eventually discharged back into the community. The first and third periods involve the medical staff and the ward and departmental staff whereas only the second, the intra-operative period, involves the surgeon the anaesthetist and the nurses and operating department practitioners. It is this intra-operative period which provides the principal location for the work of the theatre nurse and therefore the focus of the present study.

Although the intra-operative phase can be argued to account for the majority of the nursing work of the theatre nurse, it should also be born in mind that senior nursing staff in the operating theatre are responsible for the co-ordination of care across many disciplines of healthcare workers (Mahlmeister 1998). This role extends beyond the intra operative phase and includes co-ordination of staff and patients and equipment in order to ensure an uninterrupted journey for the patient as they progress through the acute phases of their surgical episode. This work is not restricted to organisation of events within the hospital but also between hospitals and outlying departments.

Work of this type has been described, from a sociological view point, as 'articulation work' by Strauss *et al* (1985) to convey the concept of organisation of group work in order that individual efforts result in more than fragmented and possibly conflicting elements, and instead represent a collaborative process towards an intended goal. Moss and Xiao (2004) list the objectives to be achieved through this co-ordination as; ensuring that the patient is ready and prepared for their surgery, the operating theatre is clean and ready for use, the surgeons are available for surgery, the necessary equipment is at hand, and that compatible staff are assigned to the theatre. The articulation of work in this context can be seen to be a complex and ongoing process as demonstrated in Moss and Xiao's study of communication patterns in three operating theatres in the United States (Moss and Xiao 2004). In their study, an experienced theatre nurse collected observational data concerning the communication patterns of the nurse in charge, which demonstrated the activities of that nurse as focused on maintaining flow, and avoiding interruptions to work through constant checking of readiness of staff and equipment. The results of Moss and Xiao's study illustrated the vast number of episodes of communication necessary to achieve 'articulation', and the potential risk caused by constant interruptions to the nurse in charge who was required to carry out multiple communication tasks simultaneously. Thus, the image presented is one of a group of theatre nurses whose activity is directed by a senior nurse who accepts responsibility for the smooth

running of the list. However Moss and Xiao's study was carried out in the United States under a system of healthcare provision and management which differs from that seen in the NHS and therefore comparison with theatre nursing activity in the UK is problematic.

The role of the theatre nurse proves difficult to define. Although it is focused on the inter operative phase, the requirements of 'articulation work' may extend it to involvement with earlier and later stages of surgical treatment. However, organisational as well as technical skills are required for theatre nurses as a group to undertake their work

2.14 *The use of teams as a means of achieving the goals of the operating theatre*

The Association of Anaesthetists of Great Britain and Ireland (AAGBI 2003) have provided guidance on safety, quality of care and optimal use of resources in the efficient use of operating theatres. The introduction to this guidance sets out the key elements of the efficient use of operating theatres including the following:

'Good utilisation depends on a complex interaction between the availability of personnel and resources and on the attitudes and good practice of all staff involved.'

(The Association of Anaesthetists of Great Britain and Ireland 2003 p2)

The important influence of the many supporting resources needed for the efficient use of the operating theatres is also acknowledged within this guidance. Particular reference is made to the administrative departments whose role in planning and scheduling operating sessions is key to ensuring that the majority of elective surgery can be accommodated at times of the day when staffing levels are at their highest and support from external departments, such as x-ray and sterile services, are most freely available. It is suggested within the guidance that arranging the workload in this way would not only improve efficiency but should have a

beneficial effect on the satisfaction and morale of operating theatre staff (AAGBI 2003). However, reference to multidisciplinary team strategies for accomplishing this way of working are not made explicit within the document. Instead, a return to medically dominated hierarchical management structure is proposed, specifically: a non-medical theatre manager, responsible for the day to day running of the department, accountable to a medical Director of Theatre Services. Although the objectives of the government literature for operating departments, which largely relate to organisation of the perioperative period, efficiency and patient safety, might be met under the arrangements described above, the AAGBI (2003) make little reference to multidisciplinary team working. Indeed, it could be argued that their proposed structure mirrors the very situation which managerialism in the NHS was intended to rectify in the 1970s through the introduction of team working (Coombs 2004).

The question of whether team work, as described in the literature, is always the most appropriate means by which to accomplish tasks and objectives (Baron, Kerr and Miller 1992) will be considered in future sections. Attempting to address this in the operating theatre could be viewed as particularly problematic as a clear description of what theatre work entails has yet to be given. The concepts presented in the literature concerning multiprofessional group working and the adoption of common goals appear not to be reflected in descriptions of theatre teams, who have been described instead as demonstrating a reluctance to step outside their professional groups. Much is written about achieving optimum outcomes (McGarvey *et al* 2000), and yet the identification of concrete measurable outcomes have yet to be addressed. Those which have been suggested (Modernisation Agency 2002) include; patient satisfaction, and efficiency of through put in terms of minimising waiting time between cases. Problems with the analysis of theatre efficiency particularly using a mathematical approach to calculate time which appears to be unused, have been criticised (Lebowitz 2003) and, it could be argued, that such approaches, although they can be seen as a convenient form of data

collection, may also fail to indicate reasons for perceived inefficiency. Patient satisfaction can be measured using standard questionnaires such as the one provided by the NHS Modernisation Agency in their publication 'A Step Guide to Tackling Cancelled Operations' (NHS Modernisation Agency 2002). However the validity of questioning patients about an episode of treatment which they may be unable to remember due to anaesthesia and post operative medication, could be challenged.

2.15 *Limitations of concepts of team work in the context of the operating theatre*

A lack of clarity can be seen in the literature regarding the nature of work in the operating theatre, in terms of the role of the operating theatre nurse, the overall focus of team work, what constitutes measurable outcomes, and the membership of teams. It appears that the adoption of team work as described in the organisational literature, has been problematic. The following section will explore the limitations of concepts of team work, within the context of the operating theatre.

2.16 *Interdependence as a means of defining team inclusiveness*

Interdependence, which has been considered the defining attribute of a team (Guzzo 1986; Schein 1986), has been conceived within the operating theatre as the interactive and collaborative process which occurs between the surgeon, the anaesthetist and the scrub nurse or ODP (Gorman 1998). However, if the concept of interdependence is viewed in terms of contributions without which surgery would not be possible, then a much wider membership could be described. Gorman, writing from the perspective of NHS management, sees the operating theatre as the prime example of team work in the healthcare setting. Gorman supports this view by arguing that the team is small in number, comprising the nurse, the surgeon and the anaesthetist and their immediate assistants. Communication is therefore instant and facilitated by proximity, assisting them in their mutual goal of successful outcome for the patient. This, it could be argued, is a somewhat simplistic, if not idealised, view of what may be considered team work in the operating theatre. If the concept of

interdependence is accepted, then the team membership can be considered to include wards, and all the support services, including sterile supplies, laboratory services, haematology and imaging, without which surgery could not take place. If the team boundaries are to be set by considerations of dependency then the team can be considered to be large and widespread, and communication, far from being instantaneous and easy, could be seen to present a considerable challenge.

2.17 *Other considerations of team membership*

Ovretveit (1996) proposes a view of team working in relation to patient care; which describes the patient's journey through their episode of care from initial diagnosis and referral to the surgeon through their admission to the ward, their surgery, their period of post operative recovery and convalescence to discharge back into the community. In this model, the surgeon receives the patient into his/her care and plans and administers care over the whole episode. At the point of surgery the operating theatre staff become associate members of the surgical team, facilitating a finite episode in the care continuum. Ovretviet provides an alternative view, in that the core operating theatre team collaborate to provide an acute clinical service within a specifically designated department to a wide range of specialities. The surgeons and anaesthetists join the team as associate members for the period of surgery and then leave, in a similar arrangement to the 'fluid' membership described by Cartwright (2000). The operating department core team remains intact after their departure. In this way the core and associate team members roles are dependent on point of view.

Thus it can be seen that potential problems of agreeing boundaries for the operating theatre team, have clear implications for perceptions of membership. The operating theatre team can be viewed as having a core membership of nurses and operating department assistants, who are present within the department at all times, with a visiting or ancillary membership of surgeons and anaesthetists who come and go specifically to perform surgery. The performance of surgery is, it could be argued the

prime reason for the operating department's existence. However, this is by no means the only work to be carried out (Lingard *et al* 2004a; Silen-Lipponen 2005). In addition, particularly in teaching hospitals there is an influx of learners and staff who may be on rotation from other theatres to gain experience in specialist fields of surgery. Continuous cover requires a rota system to be in place. This means that the staff present in the theatre are also affected by the vagaries of staff rostering. With this in mind, it could be argued that an element of fluidity of membership exists within theatres. This has implications for perceptions of belonging both on the part of the members and outsiders. In addition to this Bleakley *et al* (2004) suggest that fluid membership leads to task orientation, and a marginalisation of team process. If it is accepted that membership is key not only to perception of team existence, but also that lack of stability of membership may lead to a break down of team process, then clearly the operating theatre as a work context, presents a number of problems in this respect; Theatre personnel arrange meetings outside the operating department, although these meetings tend to be uniprofessional, and exclusive, which has been considered to depress multiprofessional team cohesiveness (Lingard *et al* 2002a).

2.18 *Overlapping and complimentary skills*

As Silen-Lipponen *et al* (2005) note in their study of the experiences of student nurses' perceptions of team work in the operating theatre, the differences in the activity, skills and attitudes of team members presented a problem in the division of work.

The fostering of the use of overlapping skills in the operating theatre may be further hindered by issues of professionalism (Hudson 2002), discussed in earlier sections, whereby the professional groups are considered more likely to demonstrate internal cohesion. If the above concept is accepted, it could be argued that the situation in the operating theatre is likely to perpetuate this state. Surgeons, anaesthetists, nurses and ODPs enter into little dialogue outside the operating theatre, most of which remains within their specific professional groups. In addition, it could be argued, that the

current proposals for non-medical staff to exceed their traditional boundaries and take on traditionally medical tasks, may exacerbate the protective stance of the medical profession. At the same time it should be born in mind that health care assistants are presently being trained to take on work traditionally the preserve of qualified nurses (Leonard 1999).

The implications of this for team working in the operating theatre can be seen in the concept of professional distancing between nursing and medicine, and its effect on timely and appropriate communication.

2.19 *Communication skills*

In addition to the problems of communication between the professional groups, it appears that even group information-giving is subject to professional separatism. Taylor and Campbell (1999) noted that theatre team briefing sessions are usually only attended by non-medical staff, although their content applies to the work that will be carried out by mixed discipline surgical teams for the day. Within the theatre even critical information is reported to be transferred in an *ad hoc* and reactionary manner (Lingard *et al* 2004a).

Firth-Cozens (2004) identifies team instability, due to shortage of staff, and insufficient resources, as contributing to the general stress of working in the operating theatre, which in itself is considered to present a major barrier to effective team working.

Whilst interdependence between groups and individuals in the operating theatre can be seen to exist, the extent of that interdependence outside the immediate surgical team as described by Gorman (1998) remains unclear. This has implications regarding the extent of inclusion in the operating team membership. Even in the narrowest perception of the theatre team, membership has already been described as fluid (Bleakley *et al* 2004), which may be considered to effect cohesion. Complementary skills may be seen to exist within a surgical team, but skills overlap is regulated by legal and professional considerations. However such demarcation of

skills may lessen with the evolution of new roles for non-medical staff. This, linked with the communication problems inherent within the operating department as described in earlier sections, gives an indication of the potential barriers to team working which have been identified in this context.

2.20 *Stress in theatre and its relationship to team working*

There is a general consensus in the literature, that the operating department presents a stressful work environment (Astbury 1988; Johnstone 1999), and that stress can affect attitudes and perceptions to working practices (Adamson *et al* 1995; Austin and Austin 1996; Mardell 1998; Farrel 1999; Berguer 1999). The following section will examine the concept of stress, firstly in the general area of health care provision, and then with particular reference to the context of the operating theatre, with specific consideration of its potential influence on team working.

2.20.1 *Defining stress*

Stress can be broadly categorised as acute or chronic (Elliott and Eisdorfer 1982). Acute stress is generally described as being the result of a sudden event such as bereavement or job loss. Chronic stress is the result of long term influences such as those which might be encountered at work (Jenkins 1993; Ogden 1996). Perhaps one of the most commonly cited definitions of stress is that provided by (Lazarus and Launier 1978), who described stress as a function of the interaction of the person and their environment. The term interaction used within this definition implies a dynamic, and possibly cyclical process, rather than a static set of conditions influencing the passive individual. To the lay person the term stress may mean feelings of tension and emotional responses to external forces. Ogden (1996) provides the following definitions of terms from the view of the psychologist: environmental influences are regarded as stressors, the response to the environmental stimuli is stress or distress. Ogden further refines the concept as involving biochemical, behavioural, psychological and physiological changes. These changes are considered to result from adaptation strategies employed by the individual, as

described by Selye (1956), whose classic work describing what he termed the 'general adaptation syndrome' continues to form the basis of research today in healthcare (Corley *et al* 2005) and in the general work environment (Jamison *et al* 2004). Researchers have also drawn a distinction between stress which is harmful, and detrimental to health, (stress or distress), and that which is helpful and beneficial (eustress) (Selye 1956). These concepts have been linked to empowerment, which in its work context attained a central status in NHS staff leadership training.

2.21 *Empowerment*

The perception of empowerment or lack of empowerment to react positively to environmental conditions, is a central concept in stress theory (Selye 1956; Lazarus and Folkman 1984), and is discussed separately in relation to the work environment in later sections. This seemingly unavoidable interaction is not considered to be an undesirable process and is seen as forming a normal and vital part of life (Selye 1956). It is the unresolved inability to regain the capacity to adjust, or adapt to an imposed situation which is considered to be the cause of excessive and undesirable stress Pollitt (1977). The adaptation to a situation referred to here, does not mean either the total triumph or total surrender, but rather striving towards an acceptable compromise or balance (Selye 1956). The ability of the individual to adapt successfully to the environmental situation is considered by stress theorists to be dependent on the individual's ability to meet certain personal needs (Maslow 1943; Sang 1999; Tyson and York 1982).

2.22 *Fulfilment of needs*

Maslow's (1943) Hierarchy of Needs (*op cit*) is perhaps the most commonly cited, and identifies the most basic human needs which must be met before successful adaptation can take place (see section 2.3.2). Since the publication of Maslow's Hierarchy, many refinements have followed, including identification of the needs of the individual as an employee within an organisation (Warr 1990; Williams *et al* 1998;

Roberts 1983; Peters and Waterman 1982). In the real world, it might be reasonably supposed that the situation wherein all persons have all their needs met at all times is improbable. Therefore according to the theories outlined above it must follow that successful adaptation is unlikely to occur in a certain proportion of cases. When the process of adaptation cannot be seen through to a successful conclusion, and the individual has instead to employ an inappropriate coping strategy, maladaptation is considered to have taken place. Maladaptation does not address the key stressor but copes with it whilst it remains unchanged. This process can also be seen as a cyclical one and can generate stressors of its own.

2.23 *Sources of stress in the healthcare setting.*

A large number of sources of stress and potential sources of stress are to be found in the sizeable literature concerned with the topic, representative samples of which are discussed in the following section.

2.23.1 *High workload*

High workload is the most commonly cited cause of stress within the NHS workforce (Warr 1990; Morgan, 1997; Weinberg and Creed 2000). This is not peculiar to the Health service however. Warr (1990), in a study measuring wellbeing and other aspects of mental health, identified nine characteristics of jobs which constitute potential stressors and placed high (or low) work demands as third on the list below low job discretion, i.e. denial of latitude to the worker regarding the way in which tasks are performed, and low use of skills. This can be seen as denying the sufficient degree of autonomy in the work environment identified by Selye (1956), as being necessary for successful adaptation.

2.23.2 *Management style as a source of stress*

The potential source of stress which has received the greatest attention in terms of breadth of consideration, is management style and its influence. Beardwood *et al* (1999) argue that it is the changes in nursing roles brought about by managers in order to meet what are perceived as "their" targets, without making any changes to the infrastructure to enable staff

to meet these new goals, which constitute the chief cause of management induced stress. As if to compound this stressful situation a number of governments including those of Great Britain, Canada, and the United States of America, have at the same time increased public power to seek redress for failure to honour publicised targets. Menzies Lyth (1988) sees health service management as mainly reactive, suggesting that changes are often brought about to address problems which have increased in scale until urgent alteration in practice is required. This can mean that change becomes associated with crisis in the perception of staff, resulting, according to Menzies Lyth, in nurses seeking comfort in compulsive repetitious "tradition" based work. This retreat into old routine further impedes the introduction of new working patterns.

The impact of individual managers' behaviour on staff nurse empowerment, job tension and work effectiveness, was examined by Laschinger *et al* (1999), whose observations imply a vicious circle of powerlessness and dependency within an organisation. Laschinger *et al* (1999) suggest that powerless individuals lack control over their fate and are dependent on those around them. Powerless managers are seen to be controlling, rules-minded and territorial, due to their perceived lack of power to act independently outside the scope of their "rule book". Alternative leadership styles appear to bring about an entirely different response leading to increased independence of action on the part of the managed body of staff. This process is described by Bass (1985), who conceptualised and described two distinct leadership styles; transformational and transactional.

2.24 *The effects of Transactional and Transformational Leadership*

Transformational leaders are defined by Bass (1985) as those who empower and increase self efficacy in junior staff, as well as providing a role model. Transactional leadership on the other hand comprises a carrot and stick approach in which the prize is often no more than to avoid the stick. These behaviours demotivate staff by increasing their dependency frustration and panic. Managers empower those under them by enabling,

removing red tape, and promoting autonomous practice. Morrison *et al* (1997) explored the relationship between leadership style and empowerment and its effect on job satisfaction among nursing staff at a regional medical centre. Sixty four percent of the sample (n=442) responded to a questionnaire designed to measure leadership styles, empowerment and job satisfaction. The empowerment measure used was Spreitzer's Psychological Empowerment Instrument (Spreitzer and Quinn 2001). Job satisfaction was measured using Warr's 'Work Attitudes and Aspects of Psychological Wellbeing Measure' (Warr 1990). The results of the study showed that transformational leadership to be positively related to empowerment, and that empowerment is positively related to job satisfaction. Low involvement in decision making and autonomy has been identified as having an adverse influence on job satisfaction (Cox *et al* 1993; Morgan 1997; Taylor *et al* 1999; Weinberg and Creed 2000). Cox *et al* (1993) in particular describe the need to feel valued as part of the organisation by the management of that organisation, as well as receiving support in the resolution of work problems. The repeatedly expressed desire of nurses to be included in decision making raises the question of why they are not. Possible explanations include the impracticality of including such large numbers. Dewland and Dewland (1999), whilst studying the effects of stress on intensive care nurses found that highly stressed individuals exhibited signs of indifference. Misinterpretation of these outward manifestations could lead to the exclusion of such individuals from decision making and even from social support when it would be most valuable.

The above findings seem to imply that nurses are ready and willing to embrace autonomy and independence in decision making, and to rid themselves of the low job discretion so frequently cited as a source of stress (Laschinger *et al* 1999; Beardwood *et al* 1999; Weinberg and Creed 2000). The question of how this arguably ideal state can have eluded nursing for so long is in part addressed by Menzies Lyth (1988) in her study of the containment of anxiety in institutions, referred to in earlier sections. In this work she describes a traditional distancing from decision

making in nursing as described by Cox *et al* (1993) as a stress avoidance strategy. She contends that all decisions are attended by uncertainty until the final outcome is known, and that the anxiety consequent on decision making is the more acute if the outcome could affect patient welfare. In order to overcome this, Menzies Lyth describes the active discouragement of nurses from using their own discretion, in favour of adherence to standardised procedures. An illustration of this system is the checking and counterchecking of a vast range of daily activities extending from the checking of controlled drugs to matters of the slightest consequence. The rationale for this course of action is suggested by Menzies Lyth to be the dissipation of the burden of decision making from the individual to the wider group. The practice of double checking, (unknown in the more autonomous profession of medicine) has not been shown to be of any benefit in preventing mistakes. On the contrary, when drugs, for example are checked by two persons it has been suggested that neither checks the item thoroughly because they are relying on the other to pick up on any error (Menzies Lyth 1988). If this is the case then spreading the burden of blame for errors could be seen as the only reason for maintaining this practice.

2.25 *Social support and mentorship*

Social support may be considered to be available in varying amounts and from a variety of sources. It could also be argued that requirement also varies according to situation. One form of support which has been formally introduced in recent times, is mentorship in the workplace. Viator (2001) considers the association between mentoring, both formal and informal, and three measures of role stress; role conflict, role ambiguity and perceived emotional uncertainty, as well as job outcomes; job performance, and turnover intentions. Although Viator's work is outside the field of healthcare, the role of the mentor seems to retain many key characteristics of offering help and support to the individual, regardless of the specifics of the environment. Viator surveyed employees of large public accounting organisations, (n=794). The results of the survey suggest that in addition to providing the traditional career

development and psychosocial support functions, informal mentors provide protégés with information which clarifies their organisational role thus reducing role ambiguity. However this mentoring may come at a cost, in the form of higher role conflict for the mentor will invariably have other commitments. Interestingly, only limited positive effects were associated with formally assigned mentors. Sosik and Godshalk (2000) examine the linkages between mentor leadership behaviours (laissez-faire, transactional, contingent, reward and transformational), protégé perception of mentoring functions, received career development, and psychosocial support and job related stress. Two hundred and forty mentor-protégé dyads were included in the study, and results showed that mentor transformational behaviour was more positively related to mentoring functions received, than transactional contingent reward behaviour. Laissez-faire behaviour was negatively related to protégé job related stress. The relationship between mentor transformational behaviour and protégé job related stress was moderated by level of mentoring functions received. Apart from support and guidance in decision making, mentorship may also be of assistance in the role ambiguity and confusion reported by Hurrell (1998). Whilst mentoring as described may assist in the role clarification and empowerment of health care staff, recent recruitment difficulties may reduce the availability of mentorship in the clinical areas.

2.26 *Role of gender*

Pugliesi (1999) tested the hypothesis of Differential Vulnerability, which contends that women are more responsive than men to work stressors, and the Differential Exposure hypothesis which proposes that there is no difference in response to stressors between the sexes. She concluded that the Differential Vulnerability hypothesis was not supported. However, data collected indicated that occupational segregation increases women's exposure to detrimental working conditions. This finding has a significance for operating theatres as work environments, where the nursing workforce is predominantly female and, unlike the ward environment, the theatre nurses place of work is largely closed to public

scrutiny. A further gender issue, is that of men in nursing in terms of gender segregation. Evans (1997) suggests that the small but growing number of men in the nursing profession does not herald a progressive integration of masculine and feminine sex roles. Indeed, Evans states that a patriarchal regime represents the high valuation which is given to all that is male and masculine which has, in Evans's opinion, placed a disproportionate number of men in positions of administrative superiority. The non integration of male and female workers through out the grades has, it is suggested maintained the position of women as an oppressed group in a male/ surgeon dominated hierarchy. Freire (1993) suggests that the oppressed group internalises the values of the powerful group and become submerged in the oppressor's reality. Results of the perceived oppression are listed as low self esteem, self hate, and nurse to nurse violence. Evans further suggests that Intensive Care, Accident and Emergency and the Operating Theatre are highly technical areas which support a masculine identity, in that they are more task orientated and less nurturing and caring. In these areas where scrub suits generally replace uniform male staff are even more easily associated with the surgeons and anaesthetists. No mention was found in the literature of whether or not female anaesthetists and surgeons are mistaken for nurses.

2.27 *Role ambiguity*

It has been recognised for some time that nurses who are confident and secure in their professional roles are able to acknowledge the presence of stress and find solutions (Revans 1964). This seems to be consistent with Kobassa's 'constellation of three attributes'; challenge, commitment and control (Kobassa *et al* 1982) which according to Kobassa's model of stress resistance are paramount in protecting individuals from the negative outcomes of stress. Kobassa *et al* (1982), describe a coping style called 'hardiness' the components of which are the 'constellation of three attributes' mentioned above. Ogden (1996) describes these components as follows; Low control is demonstrated in a tendency to exhibit feelings of helplessness in the face of stress. Commitment is defined as the opposite of alienation, The characteristics of committed individuals

being; the ability to find meaning in their work, values and personal relationships. Those who possess the attribute 'challenge' see potentially stressful events as a challenge but with an expected outcome of success. Commitment, challenge and control could be considered to contribute to job confidence and security. Dermatis (1989) designed an instrument to provide distinct measures of challenge, commitment, and control, to determine the relationship between environmental stress, hardiness, social support and coping. The relationship was found to be consistent with Kobassa's theory. Commitment was found to exert a positive effect on health through coping. However commitment and control may well be eroded by continuous restructuring of organisations (Beardwood *et al* 1999; Morgan 1997; Sleutel 2000). Role ambiguity can be seen to stem from several sources including the nurse / technician dichotomy, which is now compounded in the operating department by ODPs with a different training to that of nurses carrying out the same roles (Timmons and Tanner 2004). Cases could also be made for nurses being promoted into managerial and educational positions without sufficient training.

Abramis (1994) used meta-analysis to examine studies of two primary correlates of work role ambiguity, Job Satisfaction, and Job performance. Results suggest that role ambiguity is significantly and negatively related to both satisfaction and performance (but very weakly to the latter). True variance was seen across studies suggesting that the effects of role ambiguity are mediated by other variables. Once again this supports the theories of Viator (2001), in relation to the buffering effects of social support and informal mentorship, which are discussed later.

2.28 *Manifestations of stress in the workplace*

Healy and McKay (2000) reported a relationship between coping strategies, employed against nursing related stressors and their impact on levels of job satisfaction and mood disturbance. Standardised questionnaires and open ended questions were sent out to Registered

Nurses in Melbourne, Australia ($n=129$). It was proposed that higher levels of perceived work stress and use of avoidance coping would increase mood disturbance, while problem focused coping would be associated with less mood disturbance. The study observed the buffering effects of humour and job satisfaction on stress mood relation. There was support for Lazarus and Folkman's (1984) transactional model of stress which argues that stressors, coping and emotional reactions need to be considered jointly as interdependent. Results were positive between stress and mood disturbance. Avoidance coping was shown to lead to higher levels of distress and mood disturbance. Situational factors have also been found to be important determinants of coping strategies. In a comprehensive assessment of work stress burnout, affective and physical symptoms in hospital nurses, ($n= 260$) Hillhouse and Adler (1997) suggest that stress has more to do with work environment and overall workload than with the degree of specialisation on the unit. Results also indicate that intraprofessional conflict (with other nurses), though stressful, is less psychologically damaging than interprofessional conflict (with medical staff). It was found that high stressors were death and suffering, conflict with other nurses, and uncertainty and lack of preparation. These do not seem to have any serious effect separately, but, in support of the transactional model of stress (Lazarus and Folkman 1984) they may have a cumulative effect. Beetson (1999) in a study investigating the effects of staff support on patient care, cites the 1996 DOH study carried out by Sheffield and Leeds Universities (Borill 1996), which indicated that mental health of staff was nearly twice as good in trusts with better co-operation, communication and staff participation in decision making, than in those without. Aspects of support felt most important in a survey of 280 nurses, were effective multidisciplinary communication 79%, regular positive feedback 63% Regular praise thanks and appreciation 51%.

Although the physical and psychological manifestations of stress depend upon the individual, Jenkins (1993) lists the most commonly reported symptoms which include; backache, headache high blood pressure,

indigestion, and ulcers. Psychological manifestations include fatigue, poor concentration, irritability low or depressed mood, together with anxiety, obsessional thoughts or actions, poor sleep, and in extreme cases, depersonalisation and derealisation. Maladaptive coping strategies, such as alcohol and drug abuse, and smoking can have long term detrimental effects on health, without addressing the source of the stress. It can be appreciated that a workforce suffering such symptoms could have a serious impact on patient care, and therefore managerial interest in the identification of stress-related illness can be appreciated. Workplace stressors in the field of healthcare appear in the literature, to stem from perceptions of high workload, oppressive management style, varying degrees and availability of social support, and a lack of clarity, in the case of nursing staff in particular, regarding the precise nature of their role. The following section discusses the more specific stressors to be found in the operating department.

2.28.1 *Stress in relation to role perception of the operating theatre nurse*

Nurses working in the operating theatre have long battled with an image problem. To the lay person, the role of the nurse could be considered to be the provision of care to patients, and yet Mardell (1998) reveals the concerns of theatre nurses, that they are viewed as mechanistic, technicians or operatives. Indeed, in the USA the role of the operating room nurse is considered a technical role, and the similarity in job descriptions between theatre nurses and ODPs in the UK has fuelled an ongoing debate as to the specific contribution of nurses to perioperative practice (Timmons and Tanner 2004). Partially in response to the need for clarification in respect of patient care, the role of the 'patient's advocate' has been described and developed. It is argued that at no time is the patient more in need of the nurse, than when unconscious on the operating table. The nurse is then, the guardian of the patient's best interests in terms of restricting the procedure to that for which consent has been given, and for the patient's physical safety. In a small scale questionnaire survey ($n=20$), Mardell (1998) found that nurses felt that

they brought a caring aspect to perioperative practice by offering reassurance, and acting as advocate to the patient. This role is considered by some to be the keystone of theatre nursing, although it can be argued to be the legitimate concern of all professional groups, and the high point which justifies the many other roles which are less easy to categorise. However McGarvey *et al* (2000), found no evidence of this caring role claimed by theatre nurses, on the contrary their observational study, undertaken in the UK demonstrated that theatre nurses avoided communication with patients, even when there was ample opportunity. A further longterm debate focuses on the question of whether the true recipient of care from the theatre nurse is not, in fact, the surgeon (Adamson *et al* 1995). Although strenuously denied by both parties, Timmons and Tanner (2005) found that theatre nurses devoted a good deal of their time in looking after, and moderating the mood of the surgeon. A further important finding of their study was that this aspect of work was peculiar to nursing and not undertaken by ODPs.

The precise focus of the theatre nurse remains unclear (Mardell and Rees 1998), and McGarvey *et al* (2000) indicate the progress of this debate from an academic exercise to a management issue, as managers now wish to know what theatre nurses do for their money. McGarvey *et al* (2000), consider the future of the theatre nurse in terms of expansion and extension of their role. Whether this can be seen as offering future security for the nurse in theatre is debatable, as surgeon's assistants are currently being trained through direct entry, without prior nursing or ODP training.

2.29 *Job discretion and stress in theatre nursing*

Potential stress from lack of job discretion (Warr 1990) described earlier, applies particularly to the role of the theatre nurse. The type of work and time of commencement are dictated by the availability of both patient and surgeon, the nurse is allocated to a particular case by a rota or by a line manager, the manner in which the operation is carried out and its duration are determined by the surgeon. Indeed, medical dominance of the health

service work environment, described by Adamson *et al* (1995) is, arguably, more acutely experienced in the operating theatre than anywhere else. This is considered to diminish feelings of power and control held by nurses and ODPs over their work environment. The opportunity for organisation of individual workload seems in any case to be limited. Janssen (1999), in a study carried out in Holland, showed that motivation in general nursing staff was primarily determined by elements of the job which make it challenging. These included use of skills, variety, autonomy, social contact and opportunity to learn. It might be expected then that expanding the nurses' role would in some measure meet these requirements, reduce stress, and increase motivation. However, Magennis *et al* (1999) found that the concept was being met with unease. Although expanding the role of the nurse may permit greater autonomy and possibly increased patient contact, Magennis found that her sample feared litigation and felt vulnerable and concerned. They also lacked confidence in the degree of support they might have in adopting new roles, and many questioned the adequacy of training. Therefore, far from removing stress, the expanded role may be considered to contribute to it. Magennis is careful to distinguish between expansion of the nursing role, which maintains it within nursing education theory and practice, and extension, in the sense of taking on roles previously carried out by doctors and other healthcare professionals. Although these findings were obtained from general nursing, they may also apply to the operating theatre since the extension of the role of the nurse to assisting the surgeon, which had previously been the role of junior medical staff, and the extension of the role, after appropriate training and assessment, to undertaking minor procedures without medical supervision.

The long hours and shift systems required to maintain 24 hour cover in an operating department could be seen as additional stressors aggravating symptoms which may already exist in a section of the workforce. Smith *et al* (1998) argue that twelve hour shifts are not proven to be detrimental to health. However, Spurgeon *et al* (1997), arguing in favour of the introduction of the European Working Time Directive, which prior to its

implementation in 1996, list a range of physical disorders including psychiatric illness and coronary heart disease attributable to long working hours. It could further, be argued that the shift and on-call systems place further strain on those trying to reconcile commitments in work and domestic domains. On-call accommodation frequently leaves much to be desired, and may add the well documented environmental stressor, noise to the theatre nurses catalogue of stress, and with the possible result of sleep deprivation. Fox (1999) reports that attention span, and reaction time, key features of the theatre nurses job, are so affected by sleep deprivation that many of the worlds greatest disasters have been attributed to that cause.

The role of new management techniques and the associated changes in nursing roles in order to meet targets have, according to Beardwood *et al* (1999) played their own role as a source of stress. Aggression from colleagues in the workplace is frequently cited as a major source of distress. Farrel (1999). Describes the results of 270 interviews with theatre nurses 30% of whom experienced aggressive behaviour every day. This is seen as a particularly stressful problem as nurses are unable to withdraw from their peers as perhaps they could from managers. The interviews also revealed that no skills had been taught to the staff regarding how to deal effectively with aggressive colleagues. Thorsness *et al* (1995) in trying to promote a systems approach to tackling aggression amongst nurses, describes bullied parties retreating into "victim mode" associated with low self esteem and powerlessness. Self imposed isolation then limited their access to the buffering effects of peer support networks (Pape 1999). Health Service staff as a group, are reported as having more time off for mental and physical health reasons than the general population (Beetson 1999). Borril *et al* (1996) lay the blame for this squarely at the feet of management and peer groups, who offer little or no support.

The need for security features high up in Maslow's hierarchy of needs, and perceived lack of security leads to further stress (Tyson and York 1982). The source of much of the reported insecurity suffered by the NHS

workforce, can be traced to the effects of management culture, with its frequent restructuring, merging, in pursuit of efficiency (Gould 1998). Poor communication, which appears in the literature repeatedly as a source of stress to NHS employees, fuels speculation at times of proposed restructuring, regarding job security. Studies mainly focus on concerns surrounding job loss, although, the effects of loss of position within the workforce, loss of status, and even change of location of employment, may merit inclusion in future studies. Despite bleak impressions presented in the literature concerning employment within the NHS, not all staff are adversely effected by their work conditions. The concept of "hardiness" in nurses is described in relation to Kobasas's (1982) model of stress resistance, and may be expected to occur in the operating department as in other wards and departments. It could be argued, that the effects of employment uncertainty, discussed earlier may lead to detrimental erosion of a potentially valuable buffer. Stress may also be reduced, by addressing the issues of aggression, and bullying within departments. Farrel (1999) and Pape (1999) both offer suggestions for the resolution and control of workplace conflict, based on support, discussion and management approachability.

Stress within the operating department, as with many other areas of health care employment, has been identified as a serious problem at government level (Williams *et al* 1998), and can be seen to originate from a variety of sources. High workload and undesired overtime, result directly from the recruitment and retention problems faced by operating departments. The need for this most costly area of patient care to become as efficient as possible in financial terms, has led to poorly received restructuring projects. Lack of participation in these plans by operating department staff, and poor communication of progress have been shown to erode self esteem and commitment. Coupled with which, aggression and withdrawal of peer support which manifest themselves as a maladaptive response to stress within the enclosed theatre environment, serve to heighten the effects of stress from other sources. The issue of defining the unique nursing role in the operating department is a source of stress and

confusion, where nurses and non-nurses are employed on the same job description. These contained stresses contribute to "combat" fatigue experienced by those in the high emotional risk areas (Hay and Oken 1972; Holesclaw 1965).

2.30 *Medical/nursing relationship*

In general, a prescribing/ treatment relationship is considered to exist, between medical and non-medical staff (Astbury 1988). However, a superior/ subordinate relationship where the superior is responsible and accountable for all actions of the subordinate, is not considered to exist (Koogan *et al* 1971). If this concept is followed in the operating department, and the nursing staff are considered by the 'prescribers' as nothing more than extensions of the theatre equipment, then as Astbury states, the depersonalising attitude can lead only to further stress and lack of understanding of the organisation. Several authors have suggested that a poor understanding the multidisciplinary teams roles, within the membership of the team, is a contributor to stress and conflict. Pape (1999) identifies the antecedents of conflict as including close team work, rapid decision making and confined quarters. Pape warns of breakdown in communication and a reduction in co-operation, as a result of unresolved conflict. Collusive redistribution of responsibilities and irresponsibility among nurses was a further finding reported by Menzies Lyth (1988) in her study conducted in a large London teaching hospital. She describes nurses continually complaining about other nurses, perceiving each other as careless and irresponsible, and therefore in need of constant supervision and disciplinary action. Menzies Lyth also observes that these nurses are not only perceived as less responsible than the speaker, but less responsible than the speaker was at the corresponding stage of their own career. The explanation offered for this practice, is given as a tendency to split off undesirable aspects of one's own personality and project them onto others, thereby attributing the undesirable characteristics to the group in general and deflecting attention from the individual. In conclusion, having attributed these characteristics to other staff, the attributer treats them with the harshness that should really be directed at themselves.

Thus, the generally stressful conditions perceived to exist in the operating theatre appear to be due to a combination of contributory factors: A general feeling of lack of empowerment on the part of nursing staff, poor adaptation to stressful conditions, high workload, the effects of management style and the availability or absence of peer support. The lack of clarity of the role of the theatre nurse appears again in this context as a source of stress.

2.31 *The effects of conflict in the work place*

Interpersonal conflict between surgeons and nurses has also been shown to represent a considerable source of stress to nurses (Santamaria and O'Sullivan 1998; Danna and Griffin 1999; Kijkara *et al* 2005), resulting in scepticism, anger, inflexibility of attitude and ambivalence (Tjosvold 1997), and general dissatisfaction and absenteeism (Rogers and Lingard 2006). In addition to these reported effects, poorly managed conflict is considered to contribute to errors, causing adverse outcomes to patient care (Zaccaro *et al* 2001). Such findings add weight to a negative conceptualisation of conflict in the literature as something which must be removed in order for effective teamwork to proceed. It could be argued that part of the reason for these negative views of conflict lies in the use of what Almost (2006) describes as 'surrogate terms' to describe conflict. These include: dispute, disagreement, argument, emotional abuse, horizontal violence, bullying and aggression. As Almost (2006) points out, although related to conflict, these terms do not share its specific attributes, and should not therefore be used interchangeably.

A review of the literature pertaining to healthcare teams, and particularly to the operating theatre, reveals that not only is conflict unavoidable in working groups (Almost 2006; Rogers and Lingard 2006) but also that it can be a positive feature of team working if handled appropriately. Much of the conflict reported in the literature can be categorised as interpersonal, occurring between members of the operating team. It may therefore be useful to consider the definition of interpersonal conflict in this context.

2.32 *Defining interpersonal conflict*

In her concept analysis of conflict, Almost (2006) presents attributes of conflict as a process which involves two or more people, where one perceives the opposition of the other. Two distinct, yet related categories of interpersonal conflict are described by Jehn (1994) as: Task conflict, which relates to differences of opinion as to how a task should be carried out, and relationship conflict which is characterised by anger and aggression between group members. Almost (2006) includes 'process conflict' as a third type which centres on how work should be delegated and how the group should be managed in order to complete tasks. As discussed above, there is debate regarding whether the various forms of aggression between members, as in the case of relationship conflict, can be properly described as conflict, although it is argued within the literature that they are related because unresolved task conflict can evolve into damaging interpersonal relationships (Friedman *et al* 2000; Medina *et al* 2005).

2.33 *The existence of conflict in the operating department*

Although there is much to suggest the existence of conflict in the operating theatre in anecdote and in the grey literature of the letters pages of professional journals (King 2004; Mahawar 2003; O'Garr 2004), there remains little empirical evidence available to support these claims. However, Booij (2007) who describes conflict in the operating theatre as a dispute, disagreement, or difference of opinion regarding patient management, reports an average of four such episodes per case. Whilst asserting that the majority of these episodes are resolved almost immediately, he also warns of the long term difficulties of those that remain unresolved. It could be argued that the definition offered by Booij (2007) is somewhat restrictive in this context because although it takes into account task conflict it fails to recognise the contribution of relationship conflict (Rogers and Lingard 2006) or the effect of organisational influence (Almost 2006). Lingard *et al* (2004b) collected focus group and observational data at two Canadian hospitals, and produced findings which illustrated the important influence of institutional

context on tensions in the operating theatre. Their findings demonstrated slightly fewer episodes of conflict in smaller institutions. However, the key relevance of their findings to the present study, is the frequency of what they term 'higher tension events' which they report to occur in 70% of cases in smaller institutions, and at least once in every case in larger ones. Examples of manifestations of conflict in the operating theatre are difficult to locate in the literature. Rosenstein and O'Daniel (2006) in a small scale, single site, questionnaire study carried out in the United States, identified the following examples: 'yelling' and shouting by the surgeons 79%, abusive language 62%, berating in front of peers 61%, and condescension 55%. These types of events, they consider, cause adverse events including medical errors and compromised patient safety. In both Booi's and Rosenstein and O'Daniel's studies, the surgeon is seen to be the main aggressor, and the nurse the main recipient of that aggression. However, interpersonal conflict in the operating theatre is not restricted to these groups, and conflict within the professional groups is also described. In an American study entitled 'Horizontal Violence Among Nurses in the Operating Room', Dunn (2003) reveals what he refers to as sabotage among operating room nurses. Building on the work of Duffy (1995), who had used the term 'Horizontal' to describe sabotage directed at colleagues equal in terms of hierarchy, Dunn enlarges on the concept of sabotage, in which he includes; taking credit for the work of others, public rebuke, not giving praise where it is due, and failure to acknowledge work done. Dunn uses oppression theory to explain his finding. The oppression referred to is considered by Dunn, a nurse writing from a position of clinical experience, to be the result of strategies to maintain dominance, instigated by the medical profession and adopted and adapted by the nursing profession. This seems to agree with McGarvey *et al's* (2000) description of the consequences of perceived powerless on the part of nurses, in response to medical dominance. Dunn's choice of the operating department as a location for his study was made, because the behaviour described by Duffy had already been identified in operating departments by Blakeley *et al* (1996), and by Hamlin (2000), and because it had been recognised by Dunn as an area of

high stress. The method used by Dunn, was the administration of the Sabotage Savvy questionnaire developed by Briles (2000), by which means, respondents identify themselves as either victims, or perpetrators of sabotage. Having done so, he sought a relationship between this, and work satisfaction. Perhaps surprisingly, no significant correlation was discovered. The generalisability of Dunn's findings may, by his own admission, be limited. In addition to other considerations the median age of his sample of 146 respondents was 46 years, which might be considered to be more mature than would generally be the case in operating theatre staff. The concept of sabotage among theatre nurses appears contrary to the basic concepts of team work and, it could be argued, more closely reflects the dominating aspects of Theory X management described by McGregor (1960). Indeed, Lewis (2001), provides anecdotal support for this assumption, in describing the action of line managers taking credit for the work of others, and belittling the work of junior nurses.

The evidence presented above suggests that bullying, harassment and 'horizontal violence' are a well recognised part of interpersonal relationships in the operating theatre. However, Almost (2006) urges caution in considering all such activity as true conflict. As she points out, these phenomena are related to conflict, and may represent the effects of unresolved conflict, although they do not in themselves share the specific defining attributes described in section 2.32. The effect of the grouping of all adverse interpersonal events under the heading of conflict must, it could be argued, obscure the amount of true conflict occurring in the operating theatre.

Kaye (1996) introduces the issue of sexual harassment, mainly of nurses by physicians, in an American study set in what she perceives as the 'hostile' environment of the operating perioperative environment. Kaye describes the physical isolation of the operating theatre with access denied to casual visitors, as providing the ideal setting for the sexual predator. Kaye's work, which acknowledges the wide range of activities and encounters which are open to interpretation as sexual harassment, also

adds to the body of literature dealing with the invisibility, in terms of not being seen by the general public, and isolation of the theatre nurse, and to that which addresses the issue of male medical dominance in the healthcare setting (Gair and Hartery 2003; Du Plat-Jones 1999; Adamson *et al* 1995). Kaye assists us in acquiring an understanding of how perioperative nurses, and other perioperative care workers, are perceived, and how they perceive themselves, which may contribute to an understanding of how they manage and are managed in this environment. Such reports can only deepen divisions between the professional groups.

2.34 *Conflict between the operating theatre and other departments*

Pape (1999) considers the issue of conflict, this time between operating department personnel and other departments, whose contribution is important to the smooth running of operating lists. She advocates training in conflict and problem solving methods in order to avoid deterioration of interdepartmental relationships which, she considers, may lead to reduced productivity. This work is of interest, in the context of the present study, because the operating department is seen as a source of aggression, with a responsibility for tempering its approach to other departments.

2.35 *The perpetuation of aggressive relationships*

Verbal abuse is not confined to interaction within professional groups in the 'horizontal' manner described above. Simms (2000), describes verbal abuse, mainly of nurses by doctors, and proposes a cyclical model in which those who receive abuse can, by their reaction to it, become targets for more. Simms presents anecdotal evidence to support her model, which supports other more scholarly work relating to the behaviour of abused staff in the healthcare setting (Roberts 1983; Hamlin 2000, Diaz and McMillin 1991; Davidhizar 1990; Patterson 1996). There is much support in the literature for the traditional image of nurse abuse by doctors. Farrell (1999) in a study of aggression in the clinical setting, offers a categorisation of nurses' distress under seven headings, including; lack of support, conflict with other nurses, workload and uncertainty. This provides support for the assertion made by Dunn (2003), that conflict

within the nursing group is more problematic than that between nurses and other professional group. The detrimental effects of aggression, within and between professional groups, has been described by Quine (1999) in the context of NHS community working, chief amongst which are increased likelihood of mistakes. This concept, if it can be applied to the operating theatre, is of particular importance where mistakes can be seen not only as detrimental to patient welfare (Silen-Lipponen *et al* 2005; Helmreich and Schaefer 1994; Lingard *et al* 2004a; Pugliese and Bartley 2004), but also as fuel to aggressive relationships.

2.36 *The potential benefits of conflict within teams.*

Although descriptions of negative interpersonal relationships in the operating theatre abound in the literature, these need not necessarily represent genuine conflict (Almost 2006). Indeed, evidence is also presented which suggests that genuine conflict need not inevitably lead to aggressive behaviour. Far from being automatically detrimental to group working relationships, conflict has been described as a beneficial and necessary part of team working. Tjosvold (1997) considers the benefits of conflict, particularly in interdependent groups as a way of confronting reality and a means of arriving at solutions to problems. Tjosvold uses Deutsch's theory of competition and co-operation (Deutsch 1994) as a framework for understanding the positive nature of conflict, as a means of allowing parties with divergent agendas to create mutually acceptable solutions. Key to understanding conflict in interdependent groups is, according to Deutsch (1994) the nature of their interdependence. In a negatively interdependent group, the successful attainment of the goal of one party must mean the failure of another, whereas in the case of the positive interdependence the success of one party is contingent on the success of the other. This latter arrangement, it can be argued, describes the case of operating theatre, where successful completion of surgery in the allotted time constitutes the shared goal. However, regardless of commonality of purpose, there may be conflict regarding the preferred route. This is a situation considered by Deutsch to foster co-operative relationships if handled in a positive manner. It is suggested that

appropriate team leadership is vital to channelling conflict towards a positive outcome (Zaccaro 2001), in terms of the creation of a climate in which constructive discussion of team strategies can take place.

2.37 *The negative effects of conflict on team working in the operating theatre*

The effects of conflict have been shown to have a detrimental effect on organisational structure and function in the industrial setting (Tobin 2001), and may contribute to the problems of team working in the operating theatre, in terms of the way in which oppressed or intimidated groups behave. Sociological and psychological studies which focus on the stress experienced by staff working in the operating theatre, have identified its effects on staff behaviour and morale (Williams *et al* 1998; Astbury 1988).

Davies (1989) presents a small scale study in which operating theatre staff were found to be apathetic, isolated, and expressing inability to cope with their work and an avoidance of responsibility. These findings describe the characteristic responses of individuals to unresolved or long-term conflict (Almost 2006). However, the work of Menzies Lyth (1988), in her description of the reactions of nurses to anxiety once again provides alternative explanations. These include; projection of own failings on junior staff, and particularly germane to the present study, and reduction of the sense of responsibility. Menzies Lyth was surprised to observe the low level of tasks, for example those which could have been delegated to less skilled workers undertaken by senior staff, and by the reduction of responsibility for decision making by extensive use of check lists. She also found that nurses often consulted staff, whether senior or junior to themselves, depending upon availability as a method of spreading responsibility. Although this work was not focused on the work of the operating department, it affords useful insight, into the similarity of responses to conflict and to anxiety about the perceptions of individuals about their own efficacy demonstrated by staff retreating from such team concepts as 'full participation', and 'meaningful contribution'. It could be

argued that such responses which represent a withdrawal from participation, may pave the way for relationship conflict. In addition, Dunn (2003), likens oppressed staff in the operating department, to a dysfunctional family, and comments on their introversion and co-dependency. Morgan (1997) comments on the stress of working in theatres in the NHS, and describes the additional problems of absenteeism which result from stress. Many of the authors listed above refer to a common theme of communication problems which result from staff reaction to conflict within the work area. Relationship conflict is considered particularly damaging to groups in terms of membership dissatisfaction (DeDreu *et al* 2003), and is consistently associated with poor group performance (Jehn 1997), thus setting the scene for potential task and process conflict.

2.38 *The relationship between conflict and stress in team work*

Although stress has been shown to impact on staff interaction its relationship to conflict, which is also widely reported to occur in operating theatres, is less clear. Various types of conflict are reported in the literature and as stated above, those with the most negative connotations, although detrimental to team working, may not represent true conflict, nor share the same attributes (Almost 2006). Conflict which arises out of inevitable differences of opinion within groups regarding goals, needs, responsibilities and work allocation can, if effectively dealt with, be beneficial to the group as discussed in section 2.36. Such conflict opens channels to discussion and negotiation (Deutch 1990; Tjosvold 1997). It also enables members to develop an understanding of the perspectives of others, and in this way, it could be argued that the end result tends to reduce stress and allow work to continue. By contrast, persistent, unresolved conflict is detrimental to the work climate and to the physical and psychological well being of group membership (Zaccaro 2001). This is particularly the case when unresolved task conflict becomes unmanaged relational conflict resulting in aggression and anger (Tjosvold 1997; Booi 2007). It could be argued, therefore, that the degree of stress which

results from conflict within groups, is dependent on its nature, whether task, relationship or process conflict, and on the manner in which it is dealt with.

Responses to conflict in the workplace can be broadly categorised as either 'immediate' or 'considered strategic responses' (Rogers and Lingard 2006). Due to the nature of the situation in the operating theatre, many of the 'higher tension' events described by Lingard *et al* (2004b) and the aggressive outbursts described by Booij (2007) must belong to the former category. However, where anticipation of potential difficulties allows sufficient time for deliberation, a number of models are described in the literature which allow for between two and five possible responses to conflict (Rahim 2001). These responses form a process which moves from 'latency to aftermath' in the classic work of Pondy (1967), or 'awareness to outcome' (Thomas 1992). Rogers and Lingard (2006) describe a typical model based on the work of De Dreu and Weingart (2003) which proposes the following responses:

Problem solving, which is characterised by open communication about disagreements, with the aim of satisfying the interests of the parties involved.

Forcing, or competing by which individuals seek to bring their own goals to fruition and are willing to sacrifice relationships with other group members in order to do so.

Compromising, in which both parties make sacrifices in order to reach resolution.

Avoiding, consists of complete withdrawal from the conflict, and has been described as the way nurses typically respond to conflict (Valentine 2001).

Accommodating is related to avoiding in that the accommodating party is prepared to sacrifice their own interests in order to resolve conflict. Parties involved in accommodating are reported to use humour or other behaviours as a means of diffusing tension. Such behaviour is described in the context of the operating theatre by Timmons and Tanner (2005) in their description of the 'hostess role' of the operating theatre nurse, in maintaining the good humour of the surgeon.

Although problem-solving may be considered the most effective action to be taken in task conflict, the same is not true in relationship conflict (De Dreu and van Vianen 2001), where avoidance is the most appropriate response.

Rogers and Lingard (2006) report that problem-solving is usually the last resort of healthcare staff as a response to conflict, and is only resorted to when avoiding and forcing have failed. The use of other forms of conflict resolution, such as arbitration and mediation, are impractical in the immediate clinical setting of the operating theatre (Rogers and Lingard 2006) because neither time nor situation allows for the inclusion of a third party to assist with resolution, thus any mediation or negotiation must be initiated by a member of the group.

2.39 *The importance of communication in the work of the operating department.*

Effective communication is considered fundamental to the organisation and management of the operating department (Taylor and Campbell 1999). Castledine (1998), defines communication as including establishment of contact, meaning and exchange of information. Taylor and Campbell (1999) further refine this by stating that communication is a continual process requiring feedback, clarification and reinforcement to ensure the successful imparting of information, and checking correct understanding. In the context of the present study it could be suggested that these important aspects of communication may be difficult to achieve in situations where aggression is perceived.

Key studies of communication in relation to management of the operating department are those by Lingard *et al* (2002a, 2004a), and Moss and Xiao (2004). These differ from previous work in their use of ethnographic design, and in the case of Lingard, the use of focus groups to validate findings.

Perceived difficulties in achieving effective communication prompted Moss and Xiao (2004), to conduct their study using a structured observation tool, allowing rapid categorisation of the communication of operating room charge nurses. Seeing medical errors as being linked to poor communication, Moss and Xiao concluded that the working practice in operating rooms is such that nearly a third of communications were interrupted, with an interruption rate of eleven per hour. This, coupled with the observation that staff were asked to undertake such a degree of multi-tasking that they often forgot to carry out intended acts even when only ten seconds separated the intention from the interruption. This, one might argue, says as much about working practices in the operating department as it does about communication.

2.40 *Organising the work of the operating theatre*

Moss and Xiao (2004) use the concept of 'articulation work' developed by Strauss *et al* (1985) in their sociological study 'The Social Organization of Medical Work', in which they use the term to describe those activities which are designed to co-ordinate, schedule, mesh and integrate collaborative activities. Moss and Xiao suggest that articulation work is the main work of operating room management, and argue that the automation of certain patient preparation work, could reduce the amount of articulation work required at the time of surgery. Moss and Xiao (2004) appear to describe a system where an individual is co-ordinating all aspects of the operating list. It could be argued that instead of automation, delegation to utilise team working could also be considered as a means of reducing the workload of one individual. Many management strategies are described in the literature, in terms of their application in the American healthcare system, and may not be applicable

to the systems currently used in the UK. However, the concept of articulation work as described by Strauss *et al* (1985) is important to the present study. Corbin and Strauss (1993) subsequently developed an analytical framework based on articulation work, to which they add the concepts of 'arrangements', 'the process of working things out', and 'stance'. Corbin and Strauss offer the framework as a means of conceptualising the interactional underpinnings of how work is managed, with the aim of producing an analytical rather than an experiential explanation of why the results are as they are.

2.41 *Communication, inefficiency and team tension*

In a study of communication failures in the operating theatre, Lingard *et al* (2004a) observed over 90 hours of work in the operating theatre, and concluded that communication was often *ad hoc*, too late to be of use, too little or was inaccurate, or unresolved. They also found that one third of communication failures observed had immediate effects which included inefficiency and team tension. In this particular study, Lingard *et al* (2004a), in many cases, observed only the first two hours of surgery, in order to include the preparation, administration of anaesthetic, and commencement of surgical procedure. It may have been of value to also observe the final stages of the surgery, when the team are trying to organise the next case, whilst finishing the first. It could be argued that this situation might have yielded interesting communication problems associated with multitasking.

In addition to its clinical purpose, the operating department is also frequently a place of teaching for many professional groups. Lingard *et al* (2002a), in a study of operating room communications in Canada, noted the effects of communication between the operating room team on novices, by which term they refer to learners of various professional backgrounds. Their particular interest in this case was the effect of the reaction of the novices to scenes of tension during communication, and whether these reactions were inappropriate and worsened the situation. Lingard and her team observed 128 hours of operating room interaction

involving 35 surgical procedures. Her results showed that in discussion of safety and sterility, resources, roles and situation, communicative tension rose. She also reported that when tension rose between the communicating parties, this had a tendency to spread to other members of the team, whose responses were sometimes inappropriate, and did indeed intensify the situation. This finding represents an additional problem for the theatre manager, especially in large teaching hospitals, where learners are regularly allocated. Much of the research concerning operating room teams has been either from a sociological perspective (Fox 1992; Strauss *et al* 1985; Helmreich and Schaefer 1994, or survey reports (Dunn 2003; Kaye 1996; Davies 1989). Lingard *et al's* (2002a) ethnographic work is the first which could be identified in the literature, offering a descriptive account of communication in the context of the operating room environment, interpreted by members of the perioperative team, using focus groups, a design concept included in the present study.

2.42 *Present difficulties in addressing poor communication in the operating theatre*

Lingard *et al* (2004a) suggest training interventions to improve communications in the operating theatre, a theme taken up by Firth-Cozens (2004) who points out, that in order to make these training interventions effective it is necessary to understand the causes of poor communication. Firth-Cozens lists personality, stress, minimal staffing levels, and failure to check that what has been said has been understood among the causes of poor communication in the operating theatre. Perhaps most importantly it is suggested that team instability, where working bonds and relationships are difficult to establish due to frequent rotational allocations, means that members fail to get to know and understand each other. It could be argued that those groups who consider themselves to be crews, have to overcome such problems on a regular basis.

2.43 *Conflict, communication and patient care*

Communication is considered to have an important role in causing, moderating and resolving conflict (Rogers and Lingard 2006). Lack of communication, Rogers and Lingard suggest, is a type of avoiding and results in unresolved conflict. This causes dissatisfaction and is considered potentially harmful to patient outcomes for the reasons given above. However, more communication is not necessarily better, in fact, simply increasing communication is considered to cause more conflict rather than less (Thomas 1992). Instead, quality of communication is recommended as the way forward to conflict reduction.

Two perspectives on conflict and group working which can be applied to the operating theatre can be identified in the literature. On one hand conflict appears to exist to the detriment of effective group working. As with other stressors, previously discussed, conflict can be seen to encourage maladaptive responses associated with reduced coping abilities, avoidance of responsibility, poor decision making and ineffective communication, which serve, it could be argued, to encourage distancing rather than cohesion within the workforce. The results of these working conditions between the professional groups have been described in the international literature in terms of their potentially detrimental effects on patient care; the avoidance of responsibility has been considered to be a key factor in the persistence of unsafe practice in the operating theatre (Espin *et al* 2006), and poor communication to be responsible for the majority of medical errors during surgery (Sexton *et al* 2000; Lingard *et al* 2004a; Sexton *et al* 2006;). From a second perspective, a case is made in the literature for the need to differentiate between conflict, which has the specific attributes of stages (Pondy 1967; Thomas 1992) and types; relationship, task and process (Almost 2006), and aggression and anger which may be the result from unresolved or long-term conflict. The literature also draws attention to variation in perception between the professional groups regarding the nature and antecedents of conflict (Skjorshammer 2001). Lingard *et al* (2002) found that sources of

interpersonal conflict identified by surgeons included time constraints, availability of resources and control over situations. Causes of conflict identified by nurses appeared to focus on their perceived treatment within the group. These included; being ignored, invalidation of nursing concerns, lack of input in decision making, and disrespectful treatment by medical staff (Warner 2001). These findings may be compounded by what Deutsch (1994) describes as 'In-Group Ethnocentrism, in which it is suggested that one group considers itself to be superior in comparison to the other. In this situation the 'superior' group may attach little importance to the concerns of others.

The role of perception is seen to be key to considerations of conflict in groups, as Almost (2006) points out, regardless of whether the goals of the group are incompatible in reality, if there is a perception of incompatibility by either party, then the conditions for conflict exist. This points to the benefit of communication between group members, in which incorrect perception can be dispelled and true issues brought to the fore.

2.44 *Nurses as managers of the operating department*

Clear direction regarding who should adopt a managerial role in the operating theatre, and the extent of their powers to regulate activity, is difficult to locate in the literature. Rogers and Lingard (2006) report that surgeons consider themselves to be the leaders of operating teams in the U.S.A. However, in the experience of the researcher, the group who are generally considered to manage the operating theatre in the U.K. are the nurses. The potentially profound effects of management style upon the workforce have already been described (Beardwood *et al* 1999; Laschlinger *et al* 1999). Clarke (1996), highlights the changes to the management role of the theatre nurse, which include; taking charge of a large group of personnel, budgetary management, and the maintenance of nurse training environment in theatres. The date of Clarke's work indicates that this problem has been recognised for some time. The question of how competence in these areas acquired by nurses who are

often promoted from clinical roles is considered by Kondrat (2001), who found that many nurse managers possess and display human and leadership competencies which are seen as highly important in their role. However, development of other qualities through formal programmes are also required due to the breadth of skills required to manage a modern operating department many of which echo those identified by Clarke (1996). Nurses are generally promoted from the clinical area to management, and 'learn on the job', the skills they require to carry out complex daily management tasks in relation to clinical responsibilities. This coupled with materials management, staff training and personnel shortages constitute, it could be argued, a considerable challenge. Kondrat's questionnaire study of a random sample of 129 operating room managers in the United States, found that humanistic and leadership skills were those rated highest by a managers, whilst financial and technical skills scored lowest. No equivalent study of theatre managers in the UK could be found in the literature, although it could be argued that the required management skills would be similar.

Having considered the perceived disadvantages of coming to management from a clinical background, Furlow and Hoglan (1994) warn that operating theatre managers, and in particular those who have never worked clinically in an operating theatre, need to develop and maintain contact with their clinical workforce. Theatre staff need to feel that their departmental managers understand their working conditions and pressures. This is considered to be particularly important in cases where staff are recipients of aggressive and abusive behaviour from medical staff.

2.45 *The relationship of leadership to team working*

Although issues of leadership in the operating theatre have been discussed in the literature, as the ethnographic phase of this study progressed its potential importance to the effectiveness of the work observed became more apparent. Lingard *et al* (2005b) in exploring staff perceptions of operating room tensions, found that representatives of the professional

groups, including surgeons, anaesthetists and nurses, denied responsibility for creating or solving operating room tensions, and the lack of identifiable leadership within the operating theatre, is cited by Booi (2007) as a particular cause of conflict. This prompted a return to the literature to obtain a more detailed account of the ways in which leadership has been conceptualised within the various forms of team and group working.

Concepts of leadership are of interest in this study because of their influence on the central concepts of teamwork (Mourning 1999), including; communication (Moss and Xiao 2004), focussing on shared goals (Katzenbach and Smith 1998), patient safety, and efficiency (Healey *et al* 2004) and optimising multidisciplinary contributions to team work (McCallin 2003). In the NHS, leadership is given a high priority particularly due to its potential influence on enhancing multidisciplinary team working (McCallin (2003) although, as McCallin reports, there remains a need for a satisfactory theoretical model of leadership to explain multidisciplinary team working in the NHS.

A vast literature exists on the subject of leadership, covering a wide variety of contexts in which leadership can be described. A comprehensive review of the literature on leadership in all its permutations is beyond the scope of this thesis. Therefore, the present review focuses on leadership in relation to teams, and particularly those that share characteristics with operating theatre teams, specifically; small, short-term, and multidisciplinary teams, and those which have to deal with emerging problems.

2.46 *The search strategy*

The search to access this specific material was restricted to literature published between 1980 and the present and from sources written in English. However, frequently cited key texts which were published prior to 1980 were also included. These parameters were chosen following initial reading, in which it became apparent that a preoccupation with

management prior to this date meant that leadership was rarely mentioned (Block 1996).

The following bibliographic databases were searched; Medline, (1996-date), CINAHL (1982-date), Web of Science, University electronic Journal holdings to search abstracts in the specialist journals.

2.46.1 *Search terms and rationale for their choice.*

‘Leadership and Teams’ was used as an initial search term, situating the concept of leadership within the context of teams.

‘Leadership and short-term teams’ was selected to capture models of leadership relating to the specific characteristics of short-term teams, as in the case of the operating theatre team.

‘Leadership and crews’, ‘groups’ and ‘work teams’, were selected in order to capture variation in leadership requirements in differently designated teams. These definitions were included because of the interchangeability of terms used in literature describing team work, and because of lack of agreement on a description of the nature of operating team work.

‘Leadership and multidisciplinary teams’ ‘interdisciplinary teams’, and ‘interdependent teams’, was included because these descriptors occur in the literature in reference to operating team. ‘Leadership and healthcare teams’ and ‘healthcare delivery’ were included in order to explore the background to leadership in healthcare, and ways in which it had been conceptualised in this context.

‘Leadership in operating theatres’, ‘operating rooms’, ‘surgery’, ‘anaesthetic teams’ and ‘anaesthesiology’, were selected in order to locate specific applications of leadership to the operating theatre, and to include literature from the USA.

‘Leadership and cabin crew’, ‘flight crew’, ‘aviation’, and ‘crew resource management’, were added to the search terms, because airline crews have

been described in papers proposing ways of organising teams and leadership in regard to error reduction in healthcare (Hamman 2004) the operating theatre (Hackman 1993; Sexton *et al* 2000; Timmons and Tanner 2004), and as a means of measuring team functioning in surgery (Undre *et al* 2006). Due to the limited references in research journals to airline crew leadership, the grey literature including government sites on aviation safety, sites belonging to major airlines, and education sites (National Vocational Qualifications), and airline job descriptions, was also included. In addition, the prefixes ‘leadership model(s)’ and ‘leadership theory (ies)’ and ‘leadership conceptual model’ were included in order to capture theoretical descriptions and explanation of leadership in the given contexts.

In addition to the searches above, complementary searches were undertaken, which included the use of internet search engines such as Google Scholar, as well as searching e-journals, and ancestry searching (using reference lists of journals already obtained, as a source of relevant material), and to identify frequently cited classic texts. Hand searching of library book and journal holdings, was also employed due to difficulties associated with searching library e-journal holdings. In some cases, full text journals were only available between specific dates. Therefore abstract searches had to be followed up with hand searching of hard copies of journals.

2.47 *Defining leadership*

Although many definitions of leadership are to be found in the literature, the following concepts are considered central to the phenomenon; leadership is a process, it involves influence, it occurs in a group context and it involved goal attainment (Northouse 2007). Northouse encapsulates these concepts in the following definition;

“Leadership is a process whereby an individual influences a group of individuals to achieve a common goal.”

Northouse (2007) page 3

The ‘process’ element is central to Northouse’s (2007) description, and proposes that leadership affects, and is affected by followers. Indeed followership has been described as being a skilled activity in its own right. (Yukl 2005). Leadership, according to Northouse, is not therefore a linear process but an interactive event, available to the whole membership of the team rather than restricted to a specifically designated individual.

2.47.1 *Trait versus process leadership*

The notion, that leadership can move from individual to individual within the group, regardless of their personality or status, is central to a recurrent debate within the literature, which revolves around whether leadership is a trait of personality, required of persons designated to undertake the role of leadership, or whether it is in fact a process, as described by Northouse (2007). Born, or natural leaders have been described as having specific qualities such as height, personality and extroversion (Bryman 1988). This resonates with theories of ‘charismatic leadership’ described by Conger (1999) and is inconsistent with descriptions of leadership as a process, whereby leadership is a phenomenon which resides in the context in which it takes place, rather than in the individual, and thus is available to everyone regardless of their qualities.

2.47.2 *Assigned versus emergent leadership.*

A further debate considers whether true leadership is due to formal position, or the way in which group members respond to an individual. Northouse (2007), argues that assigned leaders are not always the real leader in a particular setting, using the term ‘emergent leaders’ to describe those group or team members who acquire leadership by gaining the acceptance of others within the group or organisation.

2.47.3 *Leadership and power.*

Power, in Northouse's definition, refers to the capacity of the individual to influence others. However, such power according to Northouse's position, need not necessarily be dependent on hierarchical position, as the power to influence may reside with emergent leaders, rather than persons assigned to the role. Katzenbach and Smith (1998) reject the notion of power associated with 'trait leadership' and argue instead that it is dependent on attitudes rather than personality, reputation or rank. In line with these arguments, it can be suggested that power, which is key to leadership function, is located with the emergent leader, rather than with an assigned leader or hierarchical superior. However, as discussed in subsequent sections, leadership power, according to Kotter (1990) remains subject to regulation through managerial influence external to the group.

2.48 *The function of leadership*

The function of leadership, according to Katzenbach and Smith (1998) includes orchestrating the contribution of team members toward a common goal. This, they argue, is achieved through the clarification of team purpose and goals, thus propagating what has been described as a 'shared mental model' (Orasanu and Salas 1993; Stout *et al* 1999; Mathieu *et al* 2000) within the team. The perceived lack of standardised communication and procedures in medicine has led recommendations for leaders to invest time in the creation of a shared mental model as a means by which the team can predict and monitor what is expected to happen (Leonard *et al* 2004). Katzenbach and Smith (1998) also consider successful leaders to build commitment and self confidence, strengthen the team's collective skills and approach and remove externally imposed obstacles and create opportunities for others. Katzenbach and Smith argue that a key requirement for success in leadership is for leaders to be perceived as doing 'real work' themselves, and, in contrast to a managerial position where policy and instruction are handed down (McCallin 2003), they neither pretend to possess all the answers, nor do they make all the

key decisions. This position argues a clear difference between management and leadership, although particularly in health care, there has been a lack of distinction between these activities (McCallin 2003).

2.49 *Distinguishing leadership and management activity*

Table 2.3, presents the parallels which can be drawn between leadership and management. Influence, working with people, and effective goal accomplishment appear consistent between the two approaches. However, differences can also be identified. Kotter (1990) argues that leadership and management functions are quite different in their scope, and yet are complementary activities each of which make a separate yet vital contribution to the success of organisations, as each activity has a regulatory effect on the other.

Table 2.3 Distinctions between management and leadership activity

Management	Leadership
Produces order and consistency <ul style="list-style-type: none"> • Planning and budgeting • Establishing agendas • Setting time tables • Allocation of resources 	Producing change and movement <ul style="list-style-type: none"> • Creating a vision • Clarification of the big picture • Setting strategies
Organising and staffing <ul style="list-style-type: none"> • Providing structure • Making job placements • Establishing rules and procedures 	Aligning people <ul style="list-style-type: none"> • Communicating goals • Seeking commitment • Building teams and coalitions
Controlling and Problem Solving <ul style="list-style-type: none"> • Developing incentives • Generating creative solutions • Taking corrective action 	Motivating and Inspiring <ul style="list-style-type: none"> • Inspire and energise • Empower subordinates • Satisfy unmet needs

Adapted from: A Force for Change: How Leadership Differs from Management
(p 3-9) Kotter, J.P. (1990) New York: Free Press
Leadership in NHS operating theatres, and anaesthetics.

The complexity of modern healthcare delivery has meant that the majority is now delivered as a collaborative interdisciplinary effort (McCallin

2003). Leadership has been seen as desirable within this context as a means of co-ordinating the contributions of different professional groups in multidisciplinary healthcare although there is little in the literature that identifies a specific and satisfactory theory of leadership which adequately explains the working of multidisciplinary healthcare (McCallin 2003). Nevertheless, McCallin (2003) considers the concept of 'shared leadership' to be the most useful, particularly the adaptation described by Wilson and Gleason (2001) who observe that the approach to leadership in multidisciplinary teams is one where all team members carry responsibility for team process and outcomes, thereby accepting formal or informal leadership roles that shift according to the situation. This echoes the 'process leadership' model described above (Northouse 2007), and differs from some traditional forms of leadership presented earlier which value disciplinary separation, individual professional expertise, consultation and frequently, competition. In contrast to the structures espoused in prior systems of healthcare delivery, application of the 'shared leadership' model to the interdisciplinary team, means that each person accepts responsibility as a member-leader. This means that members step in and out of the primary decision making role, providing guidance to colleagues and making decisions in particular situations.

Wilson and Gleason (2001) describe the roles of leadership and membership, within true multidisciplinary teams, as indivisible to the extent that team leadership is collective, and all members share responsibility for the delivery of patient care. Although this model may be considered to describe the ideal situation, McCallin (2003) suggests that further refinement is needed in order to overcome entrenched views and working patterns which she considers to persist within healthcare delivery. McCallin therefore recommends shared leadership with a 'practice leader' of the type described by Maister (1993) whose role would be to optimise individual and collective potential and manage and co-ordinate the contributions of the various professions.

It is the role of leadership in the co-ordination of traditionally separate professions that has provided a key focus for service provision in acute settings particularly anaesthetics and operating departments (Healey *et al* 2006). Particular reference is made in the literature to the need for improvement in the flow of communication between the professional groups in order to lessen the potential for error (Sexton *et al* 2000). In order to address this problem, it has been suggested that aspects of team leadership taken from the aviation industry could be adapted to improve teamwork in healthcare (Helmreich and Schaefer 1994; Hamman 2004; Sexton *et al* 2006; Undre *et al* 2006). These recommendations mainly centre on reports that ‘human factors’ are responsible for the majority of catastrophic errors in both medicine and aviation (Helmreich and Schaefer 1994; Sexton *et al* 2006). These human factors include poor communication due to the effects of fatigue and stress, risks associated with distraction and interruption, and limits to the ability of individuals to multitask (Moss and Xiao 2004). Other factors associated with human factors include poor understanding or interpretation of ‘rules’ particularly with regard to when it is appropriate to pass information between professional groups whether these are pilots and cabin crew, or surgeons and nurses. Leonard *et al* (2004) suggest that better communication, including briefings, inquiry, advocacy and assertion are central to realising improvements. Investigation into catastrophic error in aviation, which has been the source of much research into crew communication (Helmreich and Foushee 1993), has demonstrated the potential benefits of cabin crew members advocating the course of action which they think would be most beneficial to the cockpit crew, regardless of fears that such action may cause conflict. Recognition has therefore been given to the importance of leadership and co-ordination of activities, whilst maintaining a concern for shared goals for safety and efficiency, and maintaining proper balance between respect for authority and practising assertiveness (Hamman 2004).

2.50 *Crew resource management*

The measures described above, designed to lessen the risk of error in aviation due to human factors, have been formalised in a programme known as Crew Resource Management (CRM), as described by Helmreich and Foushee (1993). The importance of leadership in this way of working is well recognised, and is classified in the literature as 'Functional Leadership', which is described in section 2.52. Adapted forms of assessment taken from the aviation industry have been applied to the surgical domain (Healey *et al* 2004) and have proposed a close comparison between teamwork in operating theatre personnel with that of cockpit crews. However, Grote *et al* (2004) found that anaesthetic teams displayed more implicit co-ordination and leadership behaviours than cockpit crews, which in contrast relied more on explicit structures and protocols. These findings suggest that teamwork in the operating theatre may not be directly comparable with teamwork in aviation. Surgical teams may rely more heavily on individual interpretation and shared expectations among team members than on predefined explicit procedures.

2.51 *Examples of leadership models in health care*

Early descriptions of leadership in health care present a male-centred militaristic model, which followed on from post war reorganisation of health provision (McWhinney 1997). The principle focus was on roles' tasks, rules, control, hierarchy and a transactional model of motivation and reward (Pointer and Sanchez 1994). The leader adopted responsibility for the group and took the initiative in matters of direction and manipulation of personnel and conditions. This approach appears at odds with current conceptualisations of leadership, and it is argued by Bennis (1998) that such an authoritarian approach is more in line with bureaucratic management than leadership.

However, in more recent times, organisations have sought theoretical definition of the key characteristics of leadership. McWhinney (1997) describes an initial interest in the charismatic leader, considered to have

the power to “captivate and energise a following” (McWhinney 1997). However although such leaders were welcomed in industry, prevailing medical domination in healthcare resulted in a lack of acceptance.

Transformational leadership was proposed as a possible model, which in contrast to earlier transactional models, placed emphasis on changes to working practice, and facilitating the achievement of full personnel potential. The aim of transformational leadership is empowerment of the workforce and encouragement of shared responsibility (Bradford and Cohen 1998). However, any empowerment proved difficult to maintain as personnel recognised their limitations of their power in institutions which were devolving power to employees, whilst working under centrally imposed restrictions associated with continuing reorganisation. The limitations of transformational leadership as a model for the healthcare setting have therefore been exposed as incompatible with constant centrally imposed change (Drucker 1994).

2.52 Functional leadership as a concept

The leadership role in successfully integrating individual actions and contributions towards collective success, is considered key to effective team performance (Kogler Hill 2007). Zaccaro *et al* (2001) identify the need to focus attention on the necessary functions of leadership required to co-ordinate this collective success. As discussed in section 2.47, the leadership functions may be performed by the designated leader and/or by any member of the team (Day, Gronn and Salas 2004). A perspective of leadership which Zaccaro *et al* (2001) single out as addressing the leader’s relationship to the team is ‘functional leadership’, in which the objective of the leader is described as follows:

“If a leader manages, by whatever means to ensure that all functions critical to both task accomplishment and group maintenance are adequately taken care of, then the leader has done his or her job well”.

Zaccaro *et al* (2001) p 454.

A particular distinction of functional leadership and, it could be argued, one which lends itself to teams who face potential rapid change in what must be accomplished, is that emphasis is placed on what needs to be done for effective performance rather than on what the leader should do (Hackman and Walton 1986).

The implementation of solutions by team leaders, requires the procurement of material resources without which the team may fail regardless of motivation and other resources (Hackman and Walton 1986). This activity which is often omitted from models of leadership activities is included in Fleishman *et al's* (1991) leader behaviour dimensions. Zaccaro *et al* (2001) argue that a conceptual model of leadership can be presented under four sets of leadership processes: cognitive, motivational, affective and co-ordination.

Table 2.4 Leader behaviour dimensions

Superordinate Dimensions	Subordinate Dimensions
Information search and structuring	Acquiring information Organising and evaluating information Feedback and control
Information use and problem solving	Identifying needs and requirements Planning and co-ordinating Communicating information
Managing personnel resources	Obtaining and allocating personnel resources Developing personnel resources Motivating personnel resources Utilising and monitoring personnel resources
Managing material resources	Obtaining and allocating material resources Maintaining material resources Utilising and monitoring material resources

Adapted from Fleishman *et al* (1991)

Cognitive processes include the facilitation of accurate shared mental models, without which team members are considered to have no strategies for interaction or tactics for goal achievement, and thus struggle to anticipate each other's needs (Cannon-Bowers, Salas and Converse 1990). It has also been suggested that a clear mental model is of particular importance in those teams who are required to respond quickly to changing circumstances (Kozlowski *et al* 1996; Blickensderfer, Cannon-Bowers and Salas 1998). Of the types of mental model described by Cannon-Bowers *et al* (1993) the 'team model' could be argued to be the most pertinent to the context of the present study. This requires that team members have a clear understanding of their role in goal attainment, their own contribution, how to interact with team members in terms of information giving and also to monitor the behaviour of their colleagues in the team. This final requirement refers to identification of the need to help and support team members who are experiencing difficulties.

Motivational activities on the part of the leader include fostering notions of group cohesion as this is considered to be linked to perceptions of group efficacy, focus and task commitment (Zaccaro *et al* 2001). Groups who are highly cohesive to themselves and to their task are considered to be more resistant to disruption, and to perform well in conditions of adversity (Zaccaro, Gualtieri and Minionis 1995). It could be argued that achievement of such a degree of cohesion must present a greater challenge to leaders of groups whose membership does not remain constant, as in the case of crews.

Group cohesiveness has also been described in terms of the emotional climate of the group (Barsade and Gibson 1998). The nature of interactions within and outside the group can initiate complex processes which can have significant impact on the affect of the group. Where the collective emotion is negative, this can mute or dampen interaction resulting in impulsive group decisions which follow the general climate of the group rather than more considered action resulting from group discussion (Barsade and Gibson 1998). Moderation of team affect can

therefore be seen as an important leadership role. Zaccarro *et al* (2001) propose that leaders should strive to create a climate in which disagreements about strategy can be aired constructively, thus steering focus toward cognitive conflict which is generally concerned with task accomplishment, and away from affective conflict which concerns interpersonal disputes and is detrimental to the group purpose (Amason 1986).

Co-ordination of activity within the group relies on successful integration and combination of resources (Zaccaro *et al* 2001), and relates to the last part of Fleishman *et al's* (1991) functional leadership taxonomy (see table 2.4). As a leadership activity this involves development in the form of training and instruction, although Zaccaro *et al* (2001) suggest that in addition to skills training, teaching effective team interaction process should not be overlooked. Once again, these strategies appear most likely to succeed in teams with a constant membership in which progress can be built on over time. Particular problems can be envisaged in groups who only retain their structure for a short period until the assigned task is complete.

Although teams and work groups can be categorised according to their composition, purpose and structure, and the presence or absence of concepts and behaviours associated with models of team working, the way in which the group organises its resources toward the achievement of its goal can be seen to be largely dependent on leadership. Therefore, as Zaccaro *et al* (2001) suggest, in examining the effectiveness of work groups, leadership should be given equal consideration to the nature and composition of the group.

2.53 *Government strategy for improving theatre efficiency*

The management of operating theatres in the United Kingdom has been perceived as inefficient for many years (Lewin 1970; Audit Commission 2003). As the evolution of surgery has created a greater range of treatment, the waiting list has grown exponentially (Audit Commission

2002). In order to meet the demands within existing resources, governments have commissioned a number of reports, each of which has resulted in recommendations for increasing efficiency in the operating theatre. A key example of which includes: Lewin (1970) 'The Organisation and Staffing of Operating Departments: A Report of a Joint Sub-Committee of the Standing Medical Advisory Committee and The Standing Nursing Advisory Committee'. This publication which has become known as the 'Lewin report', was the first of its kind in responding to the perceived need for an extensive review of operating theatre organisation. The data for the report were gathered in 1968, and even at that time the increase in variety and complexity of surgical work was seen to be increasing the burden on existing capacity. Key reasons for additional stress were identified as; the introduction of shorter working hours, increased technical complexity of surgery, and difficulty in recruiting nurses to the operating theatre.

Other issues discussed within the report were; poor arrangement of operating lists, and the need for strong communication links between medical staff and theatre managers. It is of interest in the present study, that similar findings are echoed in more recent reports (Audit Commission 2003). One identified need within the report was for the training of assistants to take on some of the roles traditionally undertaken by nurses, and was pivotal in the creation of the role of operating department assistant.

Nearly twenty years later Bevan (1989), in his report 'The Management and Utilisation of Operating Departments', mirrored the Lewin report by calling for; effective list planning, improved management strategies, and provided another key step in the development of operating department assistants by calling for equality of training, terms and conditions, and type of work for nurses and operating department assistants.

2.54 *Evidence to support the effectiveness of team working in healthcare.*

The notion that teams are the most appropriate format to achieve a goal is seldom challenged or researched. Baron, Kerr and Miller (1992) suggest that whether groups are generally more effective than individuals, depends upon the task. They argue that one highly skilled individual could achieve more, in the performance of a specialist task, than a group of individuals who do not possess the same level of skills. However, although such arguments may be true when applied to the achievement of a single specific goal, it could be argued that they lack relevance to the provision of healthcare wherein the multiple processes of the patient's journey through the system means that few possibilities for purely individual work can be considered to exist. Rowe (1996) questions whether, in that case, the success of a group must depend on the capabilities of the members, and on the task to be performed. She rejects this as too simplistic as there are many outside influences which can affect group function besides individual capability including the effect of 'groupthink' (Janis 1982), occurring in crisis where group cohesion and leadership style interact in such a way as to suppress dissent. Group members in time, lend support to views which are contrary to their normal values. In short, despite the promotion of team work there appears to be little empirical evidence to support arguments for or against it as the most appropriate means to achieving objectives.

Regardless of these arguments, many government documents have been published in recent years, which identify inefficiencies described decades earlier by Lewin (1970), recommending the encouragement of collaborative interdisciplinary working as a way of improving safety and efficiency in theatres (The Audit Commission 2002, 2003; The Association of Anaesthetists of Great Britain and Ireland 2003; NHS Modernisation Agency 2002; National Confidential Enquiry into Perioperative Deaths 1997, 2002; Department of Health 2002). However, none of these documents give specific guidance regarding the composition of the interdisciplinary teams, or how their function could be evaluated.

Indeed, Healey *et al* (2004) point out, that although good team working is considered to be the foundation of good surgical and optimum surgical outcome, there is no valid method by which to measure it, nor any consensus on how this could be achieved. They propose an observational measure for the assessment of performance in surgical teams, which relies on the use of psychological behavioural scales, and records of completed tasks. Psychological measurement is also suggested by Bleakley *et al* (2004), and whilst this approach could be considered useful in evaluating the behaviours of personnel working in the operating theatre, and the number of tasks completed, it does not provide evidence of the effects of this on efficiency or patient safety issues. Lingard *et al* (2004a, 2002a) and Moss and Xiao (2004), have considered team work outcomes, but only from the point of view of communication. There appears to be very little empirical evidence to support the effectiveness of interdisciplinary team working in any area of health provision (Zwarenstein and Reeves 2000; McCallin 2003). Yet regardless of the difficulties inherent in adequately describing or quantifying team working as a way of achieving healthcare outcomes, it continues to be promoted in official guidance.

2.55 *Conclusion*

Although team performance has been proposed as central to the safe, efficient conduct of the work of the operating theatre (Healey *et al* 2006, Sigurdson 2001; DoH 2000; NHS Modernisation Agency 2001, 2002), and key to maximising the contributions of the different professions involved in perioperative care (Helmreich and Merrit 1998), research demonstrating the effectiveness of interdisciplinary team working in the operating theatre remains scarce.

Much of what has been written about multidisciplinary teams has been based on the larger primary care teams (Hudson 2002), rather than the surgical operating team, and the literature which does specifically address operating teams mainly focuses on single team work concepts (Lingard *et al*, 2002a, 2004a; Moss and Xiao 2004; Silen-Liponen 2005), or describes barriers to team working associated with stress and conflict (Sang 1999;

Simms 2000; Timmons and Tanner 2004). The sociological and psychological literature concerning the conditions necessary for the existence of efficient motivated team working (Maslow 1943; Seyle 1979; Ogden 1996), has clear implications for operating theatre team work, although little could be found within it which refers directly to this particular work context.

Models of team work abound within organisational literature, and a consensual perception of the characteristics of teams can be derived. However, the success claimed for such models is measured in terms of efficiency and out put, in the industrial setting, and their transferability to the health care setting has been questioned (Baron *et al* 1992; Poulton and West 1993; Hudson 2002). In addition, team work in industry is mainly focused on clearly defined manufacturing processes, whereas the work of the operating theatre is considered to be particularly complex (McGarvey *et al* 2000; Sigurdsson 2001) and an adequate description of this work has proved difficult to obtain.

The juxtaposition of different health care professions, represents a specific challenge to team work in the operating theatre, not envisaged in the industrial and organisational models. Although the work of the operating theatre brings the professions into close proximity, a professional distance is seen to exist between them (Evetts 1999; Freeman *et al* 2000). Medical attitudes concerning adherence to guidelines and protocols put in place to regulate the work of the operating theatre differ from those of nursing staff (McDonald 2005) as do professional philosophies of team work itself. Thus, the literature does not adequately capture the complexity of the multiprofessional environment, and there is therefore a need to explore the nature of operating theatre work more fully, in order to properly and usefully describe it.

Although the episode of patient care within the operating department includes pre, peri and post operative components, the second phase of this study focuses on the perioperative period, in which the patient receives

their surgical intervention in the operating theatre itself. This was identified in the first phase of the study as the period in which most of the conflict between professional groups took place.

The following chapter presents the practical aspects of undertaking a large postal survey, and an ethnographic study in the traditionally inaccessible environment of the operating theatre.

CHAPTER THREE

METHODS

This chapter provides an account of the design of the study, and of the methods selected to produce data which could adequately address the main research questions of the thesis. In order to address these questions fully the study was designed in two separate phases. Each phase, although quite distinct in design and method, was nevertheless integral to the exploration of the main theme of the study, and selected in consideration of its ability to contribute to specific elements of inquiry (Mason 2006).

The methodological debates surrounding the mixed method approach, adopted in this thesis, are rehearsed in Chapter Four. This chapter focuses on the practical issues of data collection in each phase of the study.

The first phase of the study sought to identify the frequency of conflict in NHS theatres, the main groups involved and the issues concerned. This required the recruitment of a large number of participants over a wide area, and therefore a postal questionnaire survey was selected as the most useful method by which this could be achieved within the constraints of the study. The findings of this phase, together with the literature, information from the focus group, and the professional experience of the researcher, informed the design and focus of the second phase. The survey also established the scale and geographical spread of conflict in NHS theatres, as a measure of the potential importance of the study to service providers in this field. A more detailed rationale is presented in subsequent sections.

The findings of the first phase of the study informed the design of the second phase, which set out to explore the circumstances under which the reported conflict took place. It also sought an explanation of the nature of group working in NHS operating theatres, which had not been fully defined in the literature (Timmons and Tanner 2005), and its relationship to conflict. In order to explore these issues an ethnographic study was designed as a means of producing data which would be useful in

conceptualising the work of the operating theatre, and theorising the relevance of working arrangements to conflict.

3.1 *Overview of chapter*

The rationale for the choice of method for the phase-one survey and its contribution to the project as a whole will be described. The design of the survey, including a full account of the recruitment and management of a focus group, and its contribution to the survey design will be given. The process of gaining ethical approval will be described, and the specific requirements for the survey listed. Accounts are given of preliminary piloting and pre-testing of the questionnaire together with methods of administration, scoring and analysis.

The second part of the chapter describes the utilisation of the survey results in the design of the phase two observational study. Subsequent sections describe selection and access to location, and the practical elements of data collection in the field encountered in the study.

The chapter concludes with an evaluation of the suitability of these approaches in addressing the central questions of the thesis.

3.2 *Rationale for conducting the phase one survey.*

Evidence suggests that conflict exists between professional groups in the healthcare setting (Farrell 1999; Simms 2000; Lewis 2001; O'Garr 2004). Particular attention has been paid to the working relationships between doctors and nurses (Strauss *et al* 1985; Wicks 1998; Walby and Greenwell *et al* 1994). To date there appears to be little discussion of interprofessional working in the context of the operating department, although some mention is made of its contribution to the wider topic of stress in that area (Astbury 1988; Davies 1989; Mardell 1998; Morgan 1997). Where reference is made to working relationships in the operating theatre, two main themes recur. Firstly, that aggressive behaviour is perceived by operating theatre staff, and secondly, that arguments between professional groups mainly concern issues which relate directly to the smooth running of the operating sessions (Walby and Greenwell *et al*

1994). This section outlines the rationale for conducting the initial phase of the study, and demonstrates how its contribution is integrated within the study as a whole. This is followed by a description of the process and collection and analysis of data. No comparative study of the geographical consistency of these experiences could be discovered in the literature searches.

In order to collect the data required to address these issues, a postal questionnaire survey was designed. Slight alterations were made to the questionnaire to produce a medical and non-medical version. An example of such an adaptation being the choice of staff grades for each group. The nature of the questions remained unaltered.

3.3 *Rationale for choice of method*

To collect the perceptions of a potentially large number of people spread over a wide area, a structured questionnaire survey, administered by post, has been suggested as the most suitable method (Rose and Sullivan 1996; Bell 1993; Fink and Kosekoff 1998). The limitations inherent within this approach are discussed in the Methodology Chapter. Constraints of time and budget were also taken into consideration when making this choice.

3.4 *Aims of the survey*

The aim of the survey included the collection of data to address the following;

- i The frequency of incidents of inter and intra-disciplinary disagreement,
- ii Aggressive behaviour as perceived by operating theatre personnel, and its prevalence in NHS operating theatres across the country.

The need for clear operational definitions of the above phenomena was recognised, and these appeared on the questionnaires as follows.

The term "disagreement" is used here to mean that the parties hold conflicting views which cannot be reconciled there and then.

And;

Aggressive behaviour can include; rudeness, bullying, shouting, malicious gossip, refusal to speak, purposeful ignoring.

The questionnaire was designed to provide data with which to address the main questions of the thesis through the following sub-objectives which reflect the content of the questionnaire sections:

1. Is there any regional variation in the perception of disagreement in the operating department?
2. Is there any variation in the perception of disagreement in the operating department between professional groups?
3. Is there any variation in the perception of disagreement in the operating department within professional groups?
4. What is the frequency of perception of specific sources of potential disagreement?
5. What is the perception of respondents of their own professional standing within the multidisciplinary team?
6. How frequently is aggressive behaviour perceived from particular groups?
7. What are the preferred methods of dealing with aggressive behaviour if encountered?
8. How do members of the multidisciplinary team feel that their role is understood by members of other professional groups?
9. To what extent do members of the multidisciplinary team feel that they share the same goal with members of other professional groups, for patient care within the operating department?

3.5 *Design of the survey:*

3.5.1 *Establishment of a focus group to inform the initial draft of the questionnaire*

In order to facilitate the design of the survey instrument, a focus group was convened. Its purpose was to supplement and refine the broad themes taken from the literature (Walby and Greenwell *et al* 1994; Wickes 1998; Astbury 1988), and to identify additional items for inclusion in the final instrument.

The value of focus groups in social science research has been well supported (Stewart and Shamdasani 1990; Morgan 1997; Krueger and Casey 2000; Knodel 1995) particularly, as in the case of the present study,

where there is a scarcity of reliable empirical evidence from literature, especially pertaining to the UK. As with all methods of interview there are debates concerning the circumstances of group interviews and potential effects on the data obtained. These are fully discussed in relation to the present study in Chapter Four.

Although a highly flexible resource (Krueger and Casey 2000; Merton Fiske and Kendall 1990), a systematic approach is still required. The following sections detail the process used in the present study to attempt to obtain the fullest benefit from the focus group.

3.6 *Design and management of the focus group session:*

3.6.1 *Recruitment of the group*

The respondents were drawn from the operating theatre staff of a London Teaching Hospital. This can be considered to be a form of convenience sampling, and is supported in this context, where representative members of a larger population are required (Stewart and Shamdasani 1990). Therefore, respondents representing various grades of staff were directly approached and asked if they would volunteer to join the focus group. A brief outline of the purpose of the group was given, along with proposed location and time. Medical and non-medical staff were approached, although little commitment was received from the medical staff, and it was decided to obtain their input using alternative methods, which will be described in section 3.6.3.

3.6.2 *Size of group*

Although it was anticipated that the nursing/ODP group would have a great deal to contribute, with the possibility of much anecdotal support for points raised, a group of eight was decided upon. This exceeds the recommendations of Krueger and Casey (2000) regarding optimum group size where such participation is anticipated. However, eight was the minimum number required to accommodate representation from all professional groups at all grades, and accommodates the twenty percent

over recruitment suggested by Morgan (1997) to allow for non attendance whilst still maintaining a group of useful size.

3.6.3 *Number of groups*

It was originally planned to have two groups. One nursing/ODP group, and one medical staff group, comprising surgeons and anaesthetists, representing all grades. This measure was in response to expressions of discomfort from potential nursing/ ODP group members about free expression in a mixed profession environment. However as only two representatives of the medical profession were able to make a commitment to the group, it was finally agreed as a compromise that the final draft of the instrument should form an extra item on the agenda of another unconnected meeting. The researcher was invited to attend this meeting for the duration of that agenda item in order to receive feedback regarding content, wording, vocabulary and layout. This method could not be considered to fall into the category of either focus group or group interview, and therefore only the outcome of the meeting will be discussed.

With regard to the nursing/operating department practitioner groups, it was planned to recruit one group, and have one meeting. It has been recommended that at least two meetings should be planned (Krueger and Casey 2000). Morgan (1997), on the other hand, considers that the moderator should decide when no further useful insights are being generated, he also regards the number of groups to be contingent on the nature of the topic and the number of subgroups in the population. In this design the subgroups can be represented in one meeting. It was considered that if the focus of the group could be well maintained, then it would be reasonable to expect to cover the topic in the allotted two hours, with a statement in the introductory comments to the group that a further meeting might be necessary, depending on the information generated by the group.

In the case of the present study, the principal researcher acted as the moderator, following Morgan's (1997) suggestion regarding the usefulness of prior knowledge of the topic and understanding of the participant's point of view. The principal researcher had had some experience of moderating meetings which had been termed focus groups, within a NHS management context. However, the nature and purpose of these groups differ markedly from those described from a social science perspective, the most notable difference being the objective in each case; Focus groups, as described in the social science literature, are convened for the purpose of promoting planned discussion in order to obtain the perceptions of the individuals in the group, in what Krueger and Casey (2000) describe as a permissive environment. The management orientated focus groups experienced within the NHS, have more closely resembled the group interview, in which the group are frequently pressed to make a decision. Clear guidance is available to the novice moderator particularly from Krueger and Casey (2000) and Greenbaum (2000).

3.6.4 *Preparation of the interview schedule*

The question content had been devised from broad themes contained within the literature, relating to working relationships between doctors and nurses (Wicks 1998; Walby Greenwell *et al* 1994; Menzies-Lyth 1988; Astbury 1988) and aggression in the work place (Mardell 1988; Morgan 1997; Davies 1989; Pape 1999; Farrell 1999). The aims of the focus group were to place these themes in the context of the operating department as a workplace, and frame the questions in a way that would promote recall of illustrative situations for respondents to the survey. Following the recommendations of Stewart and Shamdasani (1990), the interview schedule was compiled with general opening questions, followed by specific questions, with issues of higher importance placed early in the schedule. Recommendations for the number of questions which can be addressed within the two hours allowed for the meeting are between 10 and 12. In the present study 10 questions were framed, (see appendix 5.) with an additional question designed to allow each respondent to summarise their views. This strategy can be of value at the

analysis stage, as some respondents may give conflicting views during the course of the focus group session, and a concise summing up of their position may assist in interpreting data (Krueger and Casey 2000).

3.6.5 *Date and location of meeting*

A seminar room within the operating department was identified as the most appropriate location. It satisfied the need for privacy, was reasonably comfortable, was appropriately furnished with chairs, tables flip charts and had power points for recording equipment (Krueger and Casey 2000). Respondents had asked that the venue be near enough to the operating theatres for them to be able to respond to an emergency. Whilst it would have been preferable to hold the group in a location where there could be no interruptions, a compromise had to be reached which allowed respondents to feel comfortable about attending whilst not using an area of the work environment which was inappropriate or where the moderator might feel excluded (Frey and Fontana 1993).

In order to minimise the probability of work related interruptions, and to maximise the possibility of attendance, the meeting date was planned for a day, where no scheduled operating within the department would take place. All respondents received a letter which contained details of time, date and venue of the meeting.

3.6.6 *Conduct of the meeting*

The meeting was arranged for 10:30 am. All but two respondents were seated by that time. The moderator located the missing respondents and asked them if they were able to attend, or whether they would be unable to. They were able to attend, and the meeting commenced at 10:37. The moderator entered the room when all respondents were seated, as recommended by Kreuger (1994) and announced that the meeting was now ready to begin, and that all present must ensure that their seating was positioned in such a manner as to allow all members to see each other. This activity usefully terminated all prior conversations. The moderator then read an introductory statement which outlined the purpose of the

group, and in keeping with ethical guidelines (Rubin and Rubin 1995), consent was obtained for participation and for audio recording. The way in which the questions would be presented and answered, and the way in which data would be collected, analysed and subsequently used was also presented to the group. The entire session was recorded on a standard cassette recorder. Respondents and moderator both made notes during the session. The respondents used their notes to remind them of points whilst awaiting the opportunity to voice them. The moderator made notes on two occasions as an aid to analysis of the data. Most of the moderator's time was spent in encouraging reflection on past experience within the group in order to obtain examples of the perceived behaviours mentioned in the literature, maintaining focus where anecdotes resulted in deviation from the topic in hand, and general motivation. The meeting was successful in capture of the required data, with useful participation from group members.

3.6.7 *Analysis of data*

In the concluding stages of the focus group, the moderator gave a summary of the comments that had been made by the group, in order that they could be verified. This process, which Krueger and Casey (2000) term participant verification, can also be achieved by the same group verifying a post group report. Once the summary had been accepted as correct, the recording was terminated. A transcript of the session was prepared, by typing the dialogue verbatim, and leaving a wide margin for coding. Because the aim of the focus group was to enlarge upon and contextualise the themes found in the literature, no attempt was made, in the transcription of the tapes, to attribute comments to particular speakers, other than to identify those observations made by the moderator.

A commonly used coding system for focus group transcripts, is axial coding, described by Strauss and Corbin (1990). This process allows the researcher to reassemble text according to emergent themes. However in this case, a simplified adaptation of that procedure was used to extract the following elements from the text; the terms and phrases used to describe

illustrative phenomena relating to themes found in the literature, the grades and professions of those most usually involved in disagreement or aggressive actions, and general suggestions for making the instrument more resonant for its intended respondents. To this end, the extracted elements were assembled into three separate documents using word processor cutting and pasting facilities. Because the focus of the group had been divided between item refinement, and item generation, with much of the discussion centred on putting themes in the context of the specific work environment of the operating department, it was considered insufficient for complete refinement of the survey instrument as a whole. Therefore, following the observations of Fuller *et al* (1993) regarding this issue, the questionnaire was pre-tested and piloted prior to distribution.

3.6.8 *Reporting*

The final process in focus group work is reporting (Krueger and Casey 2000; Morgan 1997; Stewart and Shamdasani 1990) . However, as in the work of Nassar-McMillan and Borders (2002), the report element of the process was not expressed as a narrative, but as a revised draft of the instrument. Examples of the revisions are shown in table 3.1

The results of the meeting with representatives of the medical group included clarification of confidentiality on the top of the questionnaire, clarification of rationale for the inclusion of items 16 and 17 which refer to the availability of the surgical team, and the availability of a suitably senior surgeon, was given. It was pointed out that the non-medical focus group had identified lack of availability of theatre staff and equipment as sources of disagreement commonly cited by the medical staff. Confirmation was requested and received, therefore the related items were retained. The co-operation of the medical representatives was requested, and subsequently obtained, for the pre-testing and piloting of the instrument.

3.7 *Pre testing of the survey questionnaire.*

Following the creation of the second draft of the questionnaire the recommended process of pre-testing was undertaken (Fife-Schaw 2000; Cormack *et al* 2006; Nasser-Mcmillan and Borders 2002; Fuller *et al* 1993).

Pre testing was undertaken in order to improve content validity of the questionnaires, by assessing the consensus of understanding of the items, and making alterations as necessary.

The process was arranged as follows: Agreement was obtained from managers and staff to distribute the questionnaires in three locations within the operating department of a London Teaching Hospital, on four separate occasions, coinciding with pre-planned late starts to the morning operating. The total number of respondents was 27, comprising 22 nurses and operating department practitioners, and 5 medical staff. On each occasion, the principle researcher was present to receive comments and to answer questions. Further modifications were made to the phrasing of questions in response to the suggestions made by the group, Examples were added where dates were required as responses, and instructions were added regarding the number of boxes which could be ticked for certain questions. Shading was also added to clarify sections. Finally, the questionnaire was scrutinised by two academic advisors, who were experienced in the use of survey methods.

3.7.1 *Piloting of the questionnaire*

In order to assess the practical issues involved in postal delivery of the questionnaires, and also their distribution at the target departments, a pilot run was undertaken in accordance with recommended good practice (Robson 1993; Mailey 2002). The questionnaire packs were posted to two hospitals outside the Trust using the exact method proposed for the survey. The purpose of this exercise was to test the method of collection of data, willingness of staff to co-operate and time scale for return of completed documents. It was also helpful in calculating costs.

Table 3.1 Items created or altered following the non-medical
focus group

ITEM NUMBER	ALTERATION/INCLUSION	RATIONALE
Definition of disagreement on page 1	Inclusion of "there and then" to clarify that disagreements still occur regardless of later reconciliation	Reduce the possible variation in individual interpretation of the term.
Section II No 6	Grouping together of nurses and operating department practitioners for the purposes of this questionnaire	Due to similarity in scope, responsibility, and terms and conditions of employment nurses and ODPs were grouped as one.
Section II No 6	Inclusion of Ward Staff in the categories	Although the focus of the survey is centred on those who work in the operating department, the impact of the rest of the surgical side of the hospital should not be overlooked
Section II No 7	Attendance at multidisciplinary meetings.	It was felt that there was little integration of the medical and non medical groups. This was considered contributory to lack of appreciation of pressures on each side
Section II No 13,16,17	Additional items identified as sources of disagreement	Perceived as common sources of disagreement in the experience of the group
Section II No 18	Item retained after voting	Perceptions varied on professional equality. Item considered relevant in terms of self esteem within groups
Section II No 19 Definition of Aggressive behaviour	A list of actions which could be considered aggressive behaviour was considered to be required	Headings were developed for themes identified from reported experiences by the group, and used to form a list which could guide the reflection of survey respondents.
Section III No 21, 22	Items to measure perceptions held by professional groups of understanding of role, and goals by those outside their group	General perceptions of lack of appreciation of purpose and constraint emerged, which were eventually refined to two items

3.8 *Procedure for gaining ethical approval.*

Ethical approval for this project was gained from the London Multicentre Research and Ethics Committee (London MREC). This committee considered the ethical status of research studies designed to be conducted in multiple centres and in particular where the main researcher will be supported in the collection of data by local researchers in each centre. In

this case MREC was able to give its overall approval to the project whilst still requiring that local ethics committees be informed of the intention to carry out the survey in their areas. An explanatory letter with protocol and questionnaires enclosed was sent out, to each local ethics committee chairman. Any queries raised in the responses were dealt with immediately on receipt, and letters granting permission to proceed were filed for future reference.

3.9 *Administration of the survey*

This section provides a detailed account of procedures used in the administration of the final draft of the questionnaire. The number and selection of operating departments is described, their characteristics and the protocol for inclusion are given, and the means of dealing with refusal are discussed.

The method of administration of the questionnaire is described, as are scoring and coding procedures for returns. There is also a description of the instructions to participants, and the duration of the survey. A brief description of the procedure for gaining ethical approval is also included.

3.9.1 *Numbers of participant operating departments*

It was originally planned to identify eight operating departments which fitted the criteria for inclusion, within each of the eight NHS regions which existed at the time. Questionnaire packs were to be sent by post to the sixty four departments so identified. However, due to mergers and relocation of services within some trusts, it was necessary to increase the number of departments to sixty nine, in order to take into account the geographical spread of operating services within some trusts. Therefore, sixty nine packs containing twenty copies of the questionnaires adapted for medical staff, and twenty questionnaires adapted for non-medical staff provided a potential response from 2,760 individuals across the country.

3.9.2 *Characteristics of the operating departments*

In order for the operating departments to be included in the selection process, they had to conform to the following requirements as set out in the protocol (see appendix 6). They had to be part of a National Health Service hospital, situated in England, catering for a variety of surgical specialities. Hospitals with specific client groups such as women or children, or those catering for only one surgical speciality such as orthopaedics, or cardio-thoracic surgery were excluded, on the grounds that they employ staff who have specialised in a narrow range of procedures. It may therefore be misleading to compare their perceptions with those working in a more general field.

3.9.3 *Characteristics of staff to be included in the survey*

In order to meet the inclusion criteria for participation in the survey, nurses and ODPs were required to be employed directly by their trust, or through an agency, in the specialist fields of surgery anaesthetics or recovery, or to hold managerial or co-ordinating positions within the department. Potential medical participants were required to be qualified medical practitioners, also employed directly by their trust, and occupying a clinical role in the fields of surgery or anaesthetics at one of the following grades; House officer, senior house officer, registrar, senior registrar or consultant.

3.10 *Selection and sampling method*

The target hospitals were randomly selected in the following manner: Eight sampling frames were identified corresponding to the eight NHS regions in England. From each of these, eight hospitals, plus a back-up of eight further hospitals were selected. This was achieved by assigning consecutive numbers to each hospital, as they appeared in each regional section of the Directory of Operating Theatres and Departments of Surgery 2001 (CMA medical data 2001). Selection was made using a pseudo-random number generator (May 2002). All departments within the sample were contacted by telephone to establish initial interest in participation in the survey. Those departments who indicated that they

would not be interested were removed from the list and replaced with the corresponding department from the reserve list. Each substituted department was in turn contacted in the same way. This produced a list of those departments who had expressed an interest in contributing to the survey.

3.11 *Description of the questionnaire*

The data were collected using a tick-box questionnaire consisting of thirty one questions arranged by theme in eight sections (See appendix 7). Arranging the questions in this manner is considered to aid participants by providing a clear progression through the document (Bell 1993; Meadows 2003). Section one was designed to gather demographic data to allow grouping of respondents by qualification, grade, length of service, length of service in their current grade, and area of specialisation. The second section asked for perception of disagreements within and between groups of professionals. The third section sought an indication of frequency of attendance at multidisciplinary meetings, as an indication of interdisciplinary working practices. In the fourth section the respondent was asked to rate the frequency of disagreements, as defined on the questionnaire, between nurses/ODPs and surgeons on a given set of issues. The fifth section dealt with perception of professional equality with members of other professional groups. The sixth section asked for the respondents perception of aggressive behaviour, as defined on the questionnaire, from a given list of perioperative staff. The seventh section asked the respondent to indicate their favoured methods of dealing with aggression if encountered, and the eighth section asked for the respondents perception of how well their colleagues from other disciplines understood their role, and the extent to which they felt that their goals for patient care were shared by colleagues from different disciplines.

3.12 *Co-ordinator's questionnaire*

A short, single sheet, questionnaire (see appendix 8) was sent out to the co-ordinator at each participating department. This person had agreed to distribute the questionnaires to members of their staff, and were usually

the theatre manager in the case of non-medical staff, or the lead-clinician in the case of medical staff. This questionnaire was designed to collect descriptive data about the participating departments, including number of operations per year, number of theatres and presence or otherwise of an accident and emergency department. This information was collected in order to enable comparisons to be made between the participating departments, particularly in relation to volume of work undertaken.

3.13 *Survey procedure*

Formal letters were sent out to named contact persons representing both the peri-operative staff (usually the theatre manager) and the medical staff (usually the clinical director). These letters introduced the researcher, outlined the broad aims of the survey, and gave reassurance with regard to confidentiality and ethical approval, as recommended by Robson (1993). The letters sought consent from the above personnel to send out the questionnaire packs to their departments. Enclosed with each letter was a copy of the relevant questionnaire for their information. The covering letter included a slip at the bottom with a tick box to indicate willingness or otherwise to receive the questionnaires, and a line for signature and name of the person granting permission. The pilot study showed that permission slips returned in pre paid envelopes with a signature only, could on occasion present difficulty in determining the identity of the signatory, and thus to whom it applied. In order to overcome this potential problem, the name and address label of the recipient was attached to the reverse side of the permission slip. This proved an invaluable aid in identification of the sender, once the slip was returned. On receipt of the consent slip, a record was made of when the consent was received, any amendments made to the name or address of the respondent, and a code assigned. The code identified the hospital, and also whether the respondent represented either non-medical or medical staff.

A pack was then assembled, containing 20 questionnaires, either non-medical or medical. Fastened to each questionnaire was a covering letter (appendix 9), a consent form, (appendix 10), and instruction sheet,

(appendix 11) and a pre-paid reply envelope. Each questionnaire in the pack was assigned the same code number identifying the hospital, with a prefix to denote whether the recipients were non-medical or medical staff. The pack also contained: a covering letter addressed to the person who had given the initial consent (appendix 12), Questionnaire 1 (appendix 7) to be completed by that person, which asked for general information about the hospital and department, a copy of the protocol, and further a pre-paid reply envelope.

Because random distribution of the questionnaires at their destination cannot be assumed, and because of the response rate, caution has to be exercised regarding claims of generalisability to the wider population (Williamson 2003). Notwithstanding, this survey reveals useful data concerning the similarity of perceptions over a large geographical area.

3.14 *Scoring and coding of responses*

Each returned response envelope contained the completed questionnaire and a signed consent form. The consent form and questionnaire were then marked with an identification code unique to the individual recipient, to enable the consent form to be matched to the questionnaire at any subsequent time. The consent form was then filed. The data were then entered manually onto an Excel spreadsheet and onto Minitab version 13. Data from the medical and non-medical respondents, were entered along a row bearing the individual respondent's identification code, to enable random checking of the data entry. Data from the co-ordinator's questionnaires were entered onto a separate data sheet, and were identifiable by hospital code.

A total of twelve questionnaires were received which were incomplete, or which had been completed by persons who did not fulfil the requirements of the protocol. These were discarded.

A tally of the responses received from each participating department was maintained. Two sets of reminder letters were sent out at six and twelve

weeks. Those who had sent back refusal notification from the initial invitation to participate, were not followed up.

3.15 *Period of data collection*

The period of data collection ran from December 2001, until May 2002. The decision to terminate data collection was based on the numbers of responses received per week falling to two or less over a four week period.

3.16 *Maintenance of confidentiality*

Confidentiality can be seen as a key issue in surveys of this type (Cormack *et al* 2006), not only from an ethical viewpoint, but also to allow respondents to express their true feelings without fear of reprisal. The ethical requirement for the inclusion of a signed consent form, included with the questionnaire meant that the respondent could not be afforded anonymity. Confidentiality was, provided by the inclusion of a prepaid envelope in which the completed paperwork could be sealed and posted without the involvement of a third party. Confidentiality was further protected by the subsequent coding of the data, according to a scheme known only to the researcher.

3.17 *Data analysis*

The data collected from the questionnaires were entered directly into statistics software package, (Minitab for Windows version 13). Frequency counts were carried out to summarise the data. In order to test the statistical significance of proportions within the contingency tables, chi square was applied where relevant.

The findings of this initial phase of the study are described in detail in Chapter Five. However, in the following section, the main findings of the survey are stated, and their contribution to phase two of the study explained.

3.18 *Findings of phase one*

The questionnaire survey conducted in the first phase of this study established the following:

- That conflict exists in the operating department, and usually relates to the management of the operating list, specifically: changes in the order or content of the operating list, or overrunning of the allotted list time.
- The professional groups most commonly involved in this conflict were shown to be the nursing/operating department practitioner group, and the senior surgeons.
- Disagreement over the above was shown to happen every week in the majority of cases.
- Minimal variation to this pattern was seen within the sample.

These findings are supported in the literature, although this is sparse, and also by anecdote, from the focus group and professional experience of the researcher.

In summary, the survey results showed that conflict, concerning specific issues, and involving specific staff groups, was a frequent occurrence over a wide geographical area. However, its antecedents, and its effects on the work of the operating theatre remain unclear. The design of the second phase of the study sought to achieve the multidimensional view required (Mason 2006), to fully explore the main research questions presented in section 1.3 of Chapter One. Having outlined the aims of the second phase of the study, the practical issues of data collection in relation to the above are discussed. Decisions, including those of sampling, access, defining the field, note-taking, and gathering informal interview data, for the present study are now described. Methodological debates surrounding these activities are discussed in Chapter Four.

3.19 *Preparatory considerations*

In preparation for the ethnographic second phase of the study, the following issues had to be addressed: Ethical permission for the study had to be obtained, a suitable location had to be found, and access to the site secured. These practical considerations are now described, and rationales for decisions presented.

3.20 *Location and characteristics of the departments*

Two operating departments were identified for the observational phase of the study. The rationale for their selection was partly made on the basis of practicality, as their situation enabled the researcher to visit them frequently. Secondly, each site represented differences in scale, culture, numbers of staff, and physical layout, and were considered sufficiently different to be able to provide a wide variation in potential observation opportunities.. Access to the departments was facilitated by senior staff members of the researcher's acquaintance. The role undertaken by these staff members has been described as that of a 'gatekeeper' (Mulhall 2003). The relationship between the gatekeeper and the researcher is an important one, as the negotiation of access to sites and participants is regulated through that individual. The potential influence of the "gatekeeper" role on the research is discussed in Chapter Four. The variation between the sites is described in table 3.2.

3.21 *Access*

Access to the sites was gained following application to the theatre managers on each site. Access to the managers was organised by the gatekeeper, as were formal arrangements for honorary contracts to be drawn up through the Human Resources, and Occupational Health Departments. The latter arrangements were made in order to satisfy vicarious liability requirements, particularly in view of the professional requirement of the Nursing and Midwifery Council for the researcher to intervene in the event of an adverse clinical situation (Casey 2004).

Table 3.2 Characteristics of the observation sites

Characteristics	Site One	Site Two
Number of operating theatres	8	12
Number of Staff	98	150
Number of operations per annum	9000	13000
Presence of Accident and Emergency Department	no	yes
Number of surgical specialities	7	9
Age of building	1930s	1860s

3.22 *Ethical approval*

As in the case of the phase one survey, ethical approval was gained through application to the London MREC. Although the second phase was not in the strict sense a multi-centre project, application it was directed to the MREC because of its association with the first phase of the study. The process of gaining ethical approval on this occasion was particularly lengthy, and required three re-submissions of documents, culminating in a personal appearance by the researcher before the board. In due course permission was granted for the project to proceed, with a guarantee that the following requirements would be met:

Because of the difficulty of identifying every person who might enter the field of observation, it was agreed that formal individual consent could not be obtained without disruption. Therefore, it was stipulated that adequate information about the observation sessions must be available to all staff who could potentially be involved.

In an attempt to provide adequate information in the present study, posters with broad research details were placed in all staff areas, advertising the dates of observation, and providing researcher contact details. Leaflets were also made available for all those whose presence was anticipated in

the observation areas. As patients would be present in the theatres at the time of observation, even though their surgery was not the focus of observation, the MREC required that formal consent should be obtained in all cases. Therefore all patients who appeared on the operating lists in the proposed fields of observation were visited pre operatively in order to obtain informed consent. Should objection have been raised at any point during a period of observation, it was agreed that the observation would be terminated, and the researcher would withdraw from the area.

3.23 *Preparation for each session in compliance with ethical requirements.*

As the initial phase of the study has clearly established, the operating list does not always run according to the published version. This raised the potential problem concerning the consenting of patients. In addition, the patients sometimes did not arrive until the morning of the surgery, at which time they had to be seen by nurses, surgeons and anaesthetists prior to surgery. When observing all-day lists, the afternoon patients often had to give consent at lunchtime. No patients refused permission. The professional background and length of experience of the researcher were always made clear to the patients, in an attempt to put them at ease. This disclosure frequently invited questions about the procedure that the patient was to undergo. These questions were all referred back to the permanent staff of the ward.

Posters were displayed 24 hours before observation sessions in compliance with ethical committee requirements. As agreed, a poster advertising all dates would be displayed in communal areas, including coffee rooms and changing rooms.

3.24 *Practical issues in undertaking the observational study*

3.24.1 *Scheduling observation sessions*

Having satisfied the above requirements, a schedule of dates for observation was drawn up for each of the sites. Although it was not

possible initially to state the precise number of observation sessions that would be required, a preliminary schedule was agreed with the site managers, in order to allow the preparation of posters and information leaflets needed to advertise the sessions to the theatre staff. Arrangements were also made for the researcher to be orientated to the department.

3.24.2 *Time and duration of observations*

In order to capture the preparatory activity of the operating theatre, the periods of observation were timed to coincide with the shift starting time of the nursing and ODP staff, which was 08:00 for sessions starting in the morning, and 12:30 for afternoon sessions. Observation of the preparatory work of the theatre staff was included from the first observation session, with the aim of observing, planning, and decision making which could influence the running of the list, and the allocation of work between the personnel of the theatre. The period of observation continued beyond the end of the operating list, where overruns and cancellation and their consequences could be noted, but also to include the clearing up of the theatre in order to capture staff reaction to the session's work, and to observe the organisation of work in closing the theatre down after use. A flow chart of a typical observation session is presented in appendix 13.

3.24.3 *Dress and presentation*

The manner in which the researcher presents him or herself within the field of observation, and the effect this may have on the data is a matter requiring careful consideration (Waddington 1994). Such effects are sometimes referred to as 'reflexivity' in the literature, and the debates surrounding their management are rehearsed in Chapter Four. In the present study, the researcher dressed in the same attire as everyone else in the theatre, namely a blue scrub suit. Identical apparel was worn by all personnel regardless of profession or grade, which made identification of staff problematic. It was sometimes possible to guess the professional group to which individuals belonged by age, gender, and the type of activities they undertook. However the only certain method of

identification was to read the person's identity card. This proved difficult to do without drawing attention, and therefore it was often easier to ask a third party to identify those present. There were, in the theatres where the observation sessions took place, a number of visitors, agency staff, and medical students, who were unknown to the permanent staff. Because of this the researcher was often mistaken for one of the above. However this did mean that the presence of a stranger in the theatre was commonplace and not usually treated with suspicion. The wearing of a university identification card, often meant that the researcher was mistaken for a mature student nurse. In these cases it was suggested that there was no point in being there until there was some surgery to observe, and adjournment to the coffee room was usually recommended. On other occasions the researcher was mistaken for a member of the medical profession, in which case the same recommendation was made in more forceful terms. Once it had been made clear that the researcher was a qualified theatre nurse from another trust, undertaking research within their department, the atmosphere usually became more relaxed. It was unusual to be asked for any further information at that point. Whilst it could be argued that the presence of any stranger within the field of observation must make some difference to that setting, the degree of difference is difficult to quantify. Compelling evidence is presented in the literature to suggest that personnel in clinical areas cannot sustain behaviours different to the norm for more than a short time (Mulhall 2003). Despite the prominent display of posters and handouts, which had specifically stated the researcher's interest and purpose, concerns that untoward incidents might be reported to the manager were frequently voiced. Once reassurance to the contrary was given, the researcher's presence seemed largely to be ignored.

3.25 *Identification of the field*

Defining the field of observation requires a conscious decision on the part of the researcher (Wolfinger 2002; Mulhall 2006) and, although an initial field must be identified, it could be argued to be dynamic in that it may change according to the evolving focus of the research. In the case of the

present study, the field included the operating theatres, and adjoining anterooms, in the two London hospitals. In the initial period of observation, time was spent in various theatres within each department. However it soon became apparent that some theatres offered more activity than others, and these became the most frequently visited by the researcher. Thus, the field narrowed from its original scope, and observations in the latter stages took place in the operating theatre itself, the small anteroom where staff scrub and don sterile gowns and gloves prior to surgery, and in the side room where instrument trolleys are prepared by nursing and ODP staff ready for use in each case. These areas offered the most interaction and discussion, with the majority of activity occurring in the operating theatre itself. To provide additional clarification, a floor plan of a typical operating theatre is presented in appendix 14. Other areas of the departments were excluded from the field, because little activity was observed which could be easily related to the work of particular theatres. These areas included coffee rooms, corridors, storage areas and offices. In addition, the design of the present study included only one researcher, and therefore attention had to be focused where the most information could be obtained.

3.26 *Sampling strategy*

Arguments about the objectives of sampling in qualitative are debated in Chapter Four. However, even though it is argued that generalisability of findings is not possible, or even desirable in qualitative work (Stake 1994), persuasive counter arguments are presented for results of such work to at least have a wider resonance. Silverman's suggestion for addressing this by demonstrating the similarity of the sample to published descriptions of the population in question (Silverman 2001) proved difficult in the present study. This was because although official records exist regarding the numbers of medical and non-medical staff employed in the NHS by grade, there is no indication of how many nurses and ODPs work in operating theatres. Anecdotal evidence suggests that the numbers and grades of staff working in theatres varies only slightly, but there is no empirical evidence to indicate the variation in qualification and skill mix

in theatres across the country. Instead, theoretical sampling, or purposive sampling as it is sometimes defined (Mason 1996) was used. Theatres where examples of the activity described in the first phase of the study were likely to be seen, were sought out, with the assistance of key informants among the participants. The same process was used to attempt to find disconfirming examples of behaviour. The recording of field notes, which is dealt with in the next section, can also be considered part of the sampling process, because as discussed in the previous chapter, decisions regarding what to include and what to omit from the notes is guided by the researcher's own position experience and interests, as well as the research questions. Although the type of observation used in this study was unstructured in keeping with the principles of the ethnographic approach, broad topics for observation had already been suggested by the literature and the findings of the survey, and these influenced initial observations. Later observations were influenced by the results of concurrent analysis, described in subsequent sections.

3.27 *Note-taking*

Having taken into account the methodological issues surrounding the possible effects of visible note-taking on the participants (Sanjek 1990; Bernard (1994) a conscious decision was taken by the researcher to ensure that observation notes were made in the most inconspicuous manner possible. At the same time it was considered important not to leave too long a gap between periods of note-making in case details were forgotten. This proved to be problematic on occasion, as notes were made in cupboards and infrequently accessed storage areas, in an attempt to remain unobtrusive. However, on the rare occasions that the researcher was discovered in such a location, questions were raised regarding the content of notes that necessitated such a degree of secrecy. Eventually a process was arrived at in which the notes were made in one of the antechambers of the theatre. This appeared to have the desired effect of combining openness, with unobtrusiveness. Recording the observations was systematised by the use of broad guidelines (Casey 2004), which acted as an *aide memoire* to the researcher in regard to describing the physical

location, the number, grade and professions represented, the nature of the surgery performed, and particular interactions to observe. Although the location description requirements remained constant throughout the period of observation, the section detailing key interactions to be observed underwent changes according to the on-going analysis of data. An example of the data recording sheets used in the study is presented in appendix 15.

3.28 *Informal interviews*

In addition to recording observations, informal interviews were also undertaken with participants. The purpose of the interviews was to clarify the rationale for actions taken by the participants during observation. These interviews were closer to the “friendly exchanges” described by Burgess (1984) than anything approaching a formal interview, but were nevertheless an important source of information. Indeed, mirroring the experience of West (1980), as the researcher became more familiar in the field these interviews sometimes provided more information than could be gathered from observation. The comments made during these exchanges were noted in the field notes at the time of the interview, in the interests of accurate wording of comments. This was the only time when notes were made in the presence of the participants. The process of selecting participants for such informal exchanges was simply a matter of approaching them at a time when they were free to talk. In this case the researcher’s own experience was helpful in the identification of instances in which participants could be interrupted without detriment to the clinical work of the theatre. Participants were approached and asked if they were free to speak. If they agreed, the interview proceeded. Responses were in some cases single phrase answers in explanation of actions taken or omitted. On other occasions, the participants entered into a dialogue which expanded considerably on the original theme. As with the observation notes, a decision had to be made regarding the selection of material from these interviews to be included in the analysis. This was made on the basis of the usefulness of comments made to explain motivation and activity in the field.

3.29 *Role of the research diary*

Throughout the period of observation, a diary was maintained, detailing the personal experiences of the researcher during the study. Although the diary was not intended for access by any other party, it was useful in reflection on particular periods of observation. The content included the way in which the researcher was treated by staff on arrival in theatres, which ranged from interest to indifference and hostility. The usefulness of key informants, and personal memos on the success or otherwise of strategies. An anonymised version of a typical diary entry is included in appendix 1.

3.30 *Completion of data collection*

The decision to end the period of observation was based on the saturation of categories, and the practical issue of the time constraints of the study. By the time the originally proposed period of observation was complete, very little new information was being contributed to the analysis. A decision not to extend the period of observation could therefore be supported.

3.31 *Conclusion*

This chapter has provided a description of a mixed method approach to addressing the research questions stated at the outset of the study. The methods were selected on the basis of their potential usefulness in providing the data required to respond to those questions. The postal questionnaire survey used in the first phase of the study was able to provide information including: the frequency of conflict in the sample of UK operating theatres, the professional groups involved, the main issues which resulted in conflict, and perceptions of staff regarding their working relationships.

The findings of the ethnographic study which formed the second phase of the study, enabled the conceptualisation of the work of the operating theatre, as well as working relationships, and organisational processes. Analysis of the data produced during this phase enabled the construction

of a model of group working in the operating theatre, which addresses the question of the relationship between interprofessional working and conflict in the operating theatre by proposing an explanation of the generation of conflict in that context.

In the following chapter the methodological debates surrounding the design of the study will be discussed, and a rationale presented for the choice of research methods which are described in Chapter Six.

CHAPTER FOUR

METHODOLOGY

This thesis seeks to contribute to the knowledge base of service delivery and organisation, through the exploration of interprofessional group working in the operating theatre, and its impact on service delivery in that setting. This chapter will examine the methodological debates surrounding the mixed method approach used in this study, to produce the wide variety of data needed to address its central questions. This approach firstly enabled a description of conflict in operating theatres across the country, and of the issues associated with it. This, in turn, informed an in-depth exploration of the actions and perceptions of medical and non-medical operating theatre staff in two different settings, and shed light on the perception that team work and conflict co-exist within operating theatres in England.

The chapter opens with a presentation of the rationale for the choice of a mixed method design, followed by a discussion of the inherent methodological debates. The chapter continues with a discussion of the methodological issues surrounding the component phases of the design, specifically: with reference to the postal survey, the use of focus groups, sampling, validity and reliability, and the generalisability of findings, and in the second phase, observation, insider research, qualitative sampling techniques, reflexivity, the definition of the field, note-taking, and data collection and management. The chapter concludes with a discussion of the method of analysis including its ability to utilise the variety of data available, and to address the research questions of the thesis.

The literature review has demonstrated the existence of conflict in the operating theatres in the international literature (Astbury 1998; Davies 1989; Mardell 1998; Morgan 1997; Timmons and Tanner 2005) and the lack of specificity with regard to its causes. At the same time, the literature provides many theoretical conceptualisations of teams and team working (Guzzo 1986; Mannion *et al* 1996; Firth-Cozens 1998;

Cartwright 2000). However, a single model of team working which applies to healthcare provision, or which can be applied to the working practices of the operating theatre could not be found. Therefore, although conflict and team working in theatres are demonstrated to co-exist, it is not possible to theorise their relationship from existing knowledge. These gaps in current knowledge gave rise to the main research questions set out in section 1.3.

The choice of methods for use in the first phase of the study was driven by their appropriateness to the above research questions. The data required had to be gathered from a sample that would include all areas of England, and also include all the professional groups working in English operating theatres. Methodological issues of sampling are discussed in section 4.6, and the practical application in the case of the present study in Chapter Three. In order to gather a large amount of data over a wide geographical area, whilst remaining within the limitations of this study, a postal questionnaire was designed. Full details of its design and administration are described in the previous chapter, in section 3.9.

In order to supplement the sparse and general nature of the evidence presented in the literature, a focus group of theatre professionals was convened. Its purpose was to refine the questions and categories of the questionnaire, by improving clarity, thereby enhancing internal validity. The work of the focus group resulted in a number of amendments, which are presented in Chapter Three.

The results of the survey demonstrated the existence of conflict in English operating theatres, throughout the sample. The conflict was shown to arise over issues of management of the operating list, and to occur between surgeons, and theatre nurses and operating department practitioners.

Although the survey provided a description of conflict in theatres, in terms of its nature, frequency, spread and main protagonists, the data were insufficient to address the main research questions of this thesis.

Therefore, as the second phase of the research, an ethnographic study was designed, in order to observe group working in the operating theatre at first hand. A full description of the process is presented in Chapter Three. The methodological debates surrounding observational studies, and particularly when undertaken by clinicians in their clinical areas are rehearsed in section 4.15.1.

4.1 *Rationale for the choice of mixed method*

There has, to date, been limited engagement with the methodological or theoretical debates surrounding mixing methods which have previously been kept separate for reasons of epistemological or ontological consistency (Mason 2006). Mason presents a compelling argument for mixed methods, based on the premise that the complexity of the lived experience transcends academically derived methodological domains and dualisms, and that there is a need for a multidimensional approach in order to obtain the breadth of evidence required for an adequate conceptualisation of social experience. In discussing the particular complexities of health service delivery as a challenge to the researcher Pawson *et al* (2004) describe the requirement for including wide-ranging sources of evidence in order to try and incorporate the many activities and actors involved in care provision which spreads out across vast organisations. These views echo those of Miller and Crabtree (2000) who call for the bridging of traditional divisions between research traditions in order to capture evidence which might otherwise be missed by adherence to a specific methodological position.

Mason (2006) tempers her support for using mixed methods, as a route to new ways of understanding social experience, by including the *caveat* that the value of adopting such a design must be judged in relation to its theoretical logic, and its ability to address the questions asked about the

social world. Although Mason (2006) envisages more than one way in which data collected using different methods can be utilised to gain a fuller picture of social phenomena, the approach used in the present study fits in many respects her description of an 'integrated framework'. The integrated framework allows the various forms of data obtained to illuminate or present alternate views of 'the picture' which can be integrated or consolidated to form a fuller and more valid view. However, Cresswell's (2003) discussion of integrated designs combining qualitative and quantitative research methods includes a category described as 'sequential' designs. Of these, the one that best describes the approach adopted in this thesis, is a 'sequential explanatory' design. In other words, a simple two phase model moving from quantitative to qualitative methods, with analysis taking place separately in each phase, and interpretation taking place as a final stage.

Returning to her theme of theoretical logic, Mason (2006) argues that the juxtaposition of methods must be governed by unifying theoretical strands to lend consistency to the design, and states that:

"... integrating methods and data requires an overarching theory, or set of questions, and one coherent 'world view' of how it is possible to conceptualise the picture so that the pieces can be assembled."

Mason (2006) p 20

In the case of the present study the data are assembled under the overarching framework of models of team work. However the Mason's concept of a unifying world view could be considered problematic in mixed method research, where, for instance, the theoretical perspective which informs the ethnography would remain in tension with that of survey research. Debates concerning strategies for managing such tensions continue within the literature. However, Gilbert (2006) questions the need for the methodological commitment described above. Instead he renames Cresswell's (2003) sequential strategy under the heading of 'practical mixed methods' in which a simple two-stage linear strategy uses qualitative and quantitative methods to feed into each other without an

overarching methodological commitment. The aim in the present study is practical in the sense described by Gilbert (2006) in that the aim is to gather descriptive information, and also to provide explanation in the sense of Cresswell's sequential explanatory two-stage linear strategy. Thus it could be argued that although within that model the findings of each phase are subject to separate methodological traditions and analysis, they address an integrated set of questions, and findings are interpreted within the interactionist perspective of the main ethnographic design.

4.2 *Validity and reliability*

Previous arguments have supported the view that qualitative and quantitative methods are separated by paradigm, and also by their ability to provide scientifically valid and reliable findings (Robson 1993). Qualitative approaches have therefore, been criticised for lacking rigour and generalisability, producing instead large quantities of detailed information, applicable to a small number of settings (Mays and Pope 1995).

Mays and Pope (1995) reject the assumption that a difference exists between qualitative and quantitative approaches in terms of their ability to ensure validity and reliability of findings. They argue that validity and reliability rely not on the use of particular methods, but on the way in which the research is conducted, and a frank acknowledgement of the strengths and weaknesses of the various options.

In discussing the two methods employed in the present study, Mays and Pope (1995) argue that the selective nature of all forms of research, reveal the futility of claims to capture the 'truth' of events. They go on to suggest that any form of research must involve the collection of evidence through particular methods, each of which is associated with strengths and weaknesses. In terms of surveys, even though statistical generalisability may be claimed, it may be difficult for the researcher to ensure that the questions were understood as intended by all participants, and thus that

the responses received have the same meaning for all respondents. In the case of the observational study, where one observer is present, the findings are limited to the particular perceptions of the observer, who may or may not have inadvertently influenced the behaviour observed. It could therefore be argued that maintaining a separation between qualitative and quantitative methods based on their suggested differences is less important than the application of rigour when using them.

The following section presents a discussion of the specific methodological issues relating to the component phases of the sequential explanatory design described above, starting with the phase one postal survey.

4.3 *Survey methodological issues*

In order to address the initial questions of the study, potentially large amounts of data were required from a country-wide sample, whilst remaining within the scope and means of the study. The initial phase of the research established the geographical spread of conflict in operating theatres, and provided information regarding the main issues and protagonists. The method by which this was achieved was a postal survey, chosen for its ability to collect large amounts of data over a wide area (Rose and Sullivan 1996; Bell 1993; Fink and Kosekoff 1998). This method was well suited to addressing the initial research questions, and to the resources available for the study. However, the limitations of survey research (Robson 1993; May 2001) were recognised in relation to claims which could be made about the findings. The design of survey instruments of the type used in this study, incorporates the concept of standardisation, and as May (2001) points out, this means that the potentially wide variation in people's attitudes, and the meanings which they may confer on events, is impossible to capture using a system which presents the respondent with fixed categories to which they respond at a fixed point in time. These points can, May suggests, be overcome to some extent by design. In the present study attempts were made to achieve this by

clarifying the meanings of terms such as “aggression” and “disagreement” within the text of the questionnaire. (see appendix 7).

A further issue relating to survey research, and of particular relevance to the present study, is the difficulty in evaluating any discrepancy between accounts of behaviour and activity given in the survey, and actual behaviour and actions taken in the work setting (May 2001). Therefore, this study has adopted the approach recommended by Fielding and Fielding (1986) which, whilst acknowledging the limitations of the survey as a method, incorporates it as part of a mixed method design in which the results of the survey contribute to the direction of observation in the second phase.

A particular problem associated with self-administered questionnaires, of the type used in this study, is the potential for low response rate (Robson 1993), and the potential associated error, specifically; that the views of non-respondents cannot be known, and nor can their reasons for abstaining from comment (Cormack *et al* 2006). Therefore, whilst attempting to ensure that sufficient data could be collected, attention was given to the avoidance of undue length and complexity, which may deter potential respondents (Murray 1999).

In the case of the present study the response rate from the initial sampling frame drawn from NHS operating departments, was nearly 60%, although in the second sampling frame the total number of respondents could not be established due to ethical considerations connected to confidentiality. Thus the true non-response rate could not be assessed. The implications of this are presented in sections 4.6 and 7.5.

It has been suggested that questionnaires designed by researchers working in their own professional area, can become instruments to test their own presuppositions (May 2001). A measure taken towards addressing this issue in the present study, was the incorporation of a focus group drawn

from a wide range of theatre professionals. The focus group made a considerable contribution to the questionnaire design, and its contribution to the study, and appropriateness to the overall design are discussed in the following section.

4.4 *Focus group methodology*

The use of focus groups in social science research has enjoyed a resurgence in recent years, a key period of development can be identified from the increase in analysis and guidance published in the 1990s (Morgan 1997; Krueger and Casey 2000; Knodel 1995; Greenbaum 2000).

Since that time the potential value of this method has been well documented (Lewis 2000). Stewart and Shamdasani (1990) summarise the uses of focus groups, and their value in all stages of the research process, from gathering background information to the analysis of results. This, coupled with the lack of hard and fast rules of usage (Krueger and Casey 2000; Merton Fiske and Kendall 1990), make focus groups, arguably, one of the most adaptable methods in the social science armoury, and of particular value in the present study where directly applicable literature is scarce.

4.4.1 *A Brief historical perspective of the use of focus groups*

The focus group is not a recent concept. Its origins can be traced back to the 1920's, and the work of Bogardus (1926), who described the group interview process as a social science method. Variations on the group interview process continued into the period of World War II with the work of Merton and Kendall (1946) whose evaluative studies of the effects of training and propaganda films are considered to mark the true emergence of the focus group as distinct from other forms of group interview (Stewart and Shamdasani 1990). At this time the potential for focus groups in marketing research was also acknowledged (Lazarsfeld 1972), and development and published guidance (Greenbaum 2000) have helped to retain its prominence in this field. The use of focus groups in

social science did not enjoy the same high profile, a fate which has been attributed to negligence on the part of its original proponents (Morgan 1997).

4.4.2 *Rationale for the use of the focus group*

The value of focus groups in survey design has been well described (May 2001; O'Brien 1993; Frey and Fontana 1993; Fuller *et al* 1993). However, their main use has been in ensuring culturally appropriate questions and vocabulary for use with particular ethnic populations (Globe *et al* 2002; Hughes and DuMont 1993). Nassar-Mcmillan and Borders (2002) not only employed focus groups in the refinement of questions for surveys, but also describe the further step of item development, identifying the value of this method where little literature is available on a topic. The use of focus groups in projects associated with the operating department, although recommended by official bodies for general problem solving activities (NHS Theatre Modernisation Agency 2001), is less well documented. In this context they have been used for gathering perceptions of staff and patient satisfaction, but have also been used for problem solving. In this use they can be more accurately considered nominal group processes, aimed at brainstorming and problem solving (Krueger and Casey 2000). The question content of the survey instrument, used for the present study, in its first draft, had been devised from themes contained within the literature relating to stress in the workplace, behaviour of groups and individuals in organisations, and reported conflict in healthcare settings.

4.4.3 *The role of the moderator*

There is general agreement in the literature that the key purpose of the focus group is to voice feelings and perceptions on a specific topic, through moderated interaction (Kreuger 1994). The role of the moderator is key to maintaining the focus of the group, although There is disagreement, on the ideal qualities of the moderator. Morgan (1997) dispels the myth, as he sees it, of the need for a moderator with highly developed professional skills. On the contrary he considers the attributes

of knowledge of the project, and sensitivity to the main topic to be most advantageous. In the present study the moderator was the researcher. The importance of the moderator's role was appreciated in terms of directive input, although caution was also observed in avoiding steering the group in the direction of the researcher's personal viewpoint. Kreuger (1988) states the importance of the skills of mental discipline and well developed group interaction skills. These are needed, Kreuger goes on to say, in order to restrain dominant persons in the group, and encourage quieter ones. Greenbaum (2000) suggests a more stage managed approach, particularly when dealing with doctors. He advocates making an entrance once all are seated, followed by a firm statement that proceedings are about to commence. This was the approach adopted in the present study. The intention of this approach is to establish who is in charge of the group, and perhaps reveals as much about perceptions of the medical profession as it does about focus groups. It should also be borne in mind that Greenbaum is speaking from a marketing perspective, where considerable payments can be made to focus group participants, whereas in many social science studies good will is of paramount importance.

The final process in focus group work is reporting (Kreuger 1988; Morgan 1997; Stewart and Shamdasani 1990). However as in the work of Nassar-McMillan and Borders (2002), the report element of the process was not expressed as a narrative, but as a revised draft of the instrument. Examples of the revisions are shown in table 3.1.

The results of the meeting with representatives of the medical group included clarification of confidentiality on the top of the questionnaire. Clarification of rationale for the inclusion of items 16 and 17 which refer to the availability of the surgical team, and the availability of a suitably senior surgeon, was given. It was pointed out that the non-medical focus group had identified lack of availability of theatre staff and equipment as sources of disagreement commonly cited by the medical staff. Confirmation was requested and received, therefore the related items were retained. The co operation of the medical representatives was

requested, and subsequently obtained, for the pre-testing and piloting of the instrument.

4.4.5 *Conclusions regarding the use of focus groups*

The use of focus groups for the refinement and generation of questionnaire items, has been documented in the literature (Robson 1993; Kreuger 1994; May 2001). The use of such groups has been chiefly concerned with the revision of instruments, in order to render them suitable for use with specific ethnic groups or specialist groups (O'Brien 1993; Nasser-McMillan and Borders 2002; Fuller *et al* 1993). The strengths of this method lie in its effectiveness in item generation, where little prior research has been published. Nasser McMillan and Borders (2002) also argue that the inclusion of respondents who represent the target sample, add a quality control measure and contribute to minimising bias in terms of item selection. Potential limitations inherent in the method have also been identified. These include limited generalisability of results due to small numbers of participants involved (Stewart and Shamdasani 1990), and the possibility of interdependent or biased responses as suggested by Krueger and Casey (2000), although this possibility is considered minimal by Morgan (1997). It could be argued that the problems described above could potentially apply to many forms of research, and that the overall effect of the use of focus groups in this context is to reduce bias, and to add a measure of validity to survey instruments.

4.5 *Sampling in the survey*

The importance of obtaining a random sample in research of this type depends upon the importance of being able to generalise the results to the wider population. In this case a true random sample was not obtained because the populations of the participating operating departments could not be known, due to local data protection and confidentiality policy. The method of distribution of the questionnaires was therefore delegated to the contact person in each department, and therefore random distribution of the questionnaires cannot be assumed. However the purpose of the survey

was to provide descriptive evidence of the national spread of conflict and group working in the operating theatre, and to identify the main protagonists. It could be argued that although the results of the survey cannot be generalised they nevertheless provide a persuasive description and an adequate indication of national spread.

4.6 *Ethical issues relating to the survey*

Participants in surveys, it is claimed, may well be concerned about the way in which their interests, either collectively or individually may be affected by publication of results (Robson 1993). Although strict anonymity could not be included in the design due to the need for all respondents to return with their responses, a signed and dated consent form, complete confidentiality was assured. Responses could be traced back to the hospital from which they had originated, and the respondent could be identified by grade and profession, through a coding system known only to the researcher. Ethical issues relating to the observational study proved to be more complex, and these are discussed in section 4.16.

The survey component of the sequential design was successful in providing data indicating the frequency and nature of events, and the main actors in instances of aggression and disagreement. However, as explanation as well as description was needed in order to answer the research questions, these were obtained through the ethnographic component of the study.

4.7 *The suitability of ethnography to the present study*

This thesis seeks to address its central aims through an exploration of the manner in which interaction between the professional groups in the operating theatre influences the organisation of their work, to explain their rationalisation of the organisational approaches adopted, and to examine the relationship between work organisation and conflict as described in the literature and the survey results.

In selecting the most useful methodological approach to addressing these objectives, several approaches were considered: Attempting to produce data using a design based purely on interviews appeared problematic due to the difficulties reported in the literature concerning the ability of nurses to describe their actions in the operating theatre (McGarvey *et al* 2000). This suggests the possibility that strategies used by theatre nurses in their daily work may be difficult to identify as they may not be recognised by respondents. The use of observation of practice supported by informal interviews in order to obtain reasons for action presented a means of obtaining a more complete picture of the working practices of the theatre. As the purpose of the research was to explore and describe group working in this context, an ethnographic design was selected as the most appropriate approach.

Attempting to present a concise definition of ethnography is problematic, as no standard description could be located. Hammersley and Atkinson in their introductory chapter entitled "What is ethnography?" state their intention to:

...interpret the term 'ethnography' in a liberal way, not worrying too much about what does and does not count as examples of it."

Hammersley and Atkinson (1994) p 1.

They go on to say that the term 'ethnography' mainly refers to a specific method or set of methods, by which the researcher obtains data through participation in the daily lives of a group of persons. Ethnography is used as a description of both a written account of a project, and of the methodology employed to produce it, which can combine a range of methods and incorporate qualitative and quantitative data (Savage 2000a). The origins of ethnography can be traced back to social anthropology, in which the shared cultural beliefs and practices of small and often remote communities provided the focus of interest (Silverman 2000). Adaptation of the early techniques of the anthropologists by the sociologists of the 'Chicago School', particularly Park, Dewey and Mead, enabled the study of urban cultural groups, and corporate organisations (Cresswell 2003).

Over time, views and perspectives on culture have changed, and challenges to traditional views of culture as existing in shared beliefs and practices, have given recognition to the differences which exist in social groups (Savage 2000a). Culture has also been conceptualised as the struggle of members of a group, for example a multidisciplinary health care team, to rationalise their position in a situation of unequal power (Wright 1998). Redefining culture in this way indicates the suitability of ethnography to the study of situations in healthcare, and in particular its organisation (Fulop *et al* 2001). As Savage points out:

"[Ethnography] can provide a nuanced understanding of an organisation and allow comparison between what people say and what they do. It can for instance help to identify ways that an organisation's formal structure (its rules and decision making hierarchies) are influenced by an informal system created by individuals or groups with the organisation, or indicate how professional knowledge is locally produced in particular settings."

Savage (2000a) p 1402

Ethnography is therefore a flexible and inclusive methodology, which takes into account context and reflexivity, and as such can provide access to the practices and perceptions of work groups as they are played out in the workplace. No single epistemology is considered to underpin ethnographic work. Instead notions of what can be accepted as legitimate knowledge varies according to the type of ethnography undertaken (Hammersley and Atkinson 1994).

The diversity of epistemological positions taken by ethnographers has resulted in a versatility which is considered to be of particular value in the study of healthcare although this very attribute has also led to debates about the evaluation of ethnographic studies, particularly in terms of relevance and validity (Savage 2000a), as discussed in section 4.18.

4.8 *Ethnography in the study of service delivery and organisation*

The suitability of ethnography as an approach to the study of organisations has been acknowledged (Ferlie 2001) as a means of discovery and communication of the reality of organisational life as experienced by those who inhabit it. Rather than relying on pre-existing constructs, the researcher's task is to uncover constructs in the data, often through the use of grounded theory (Glaser and Strauss 1967). A precise description of ethnography is more difficult to locate. Hammersley and Atkinson (1994), as described in section 4.7, dismiss the need for any concrete definition, or identification, of examples of what can and cannot be considered ethnography. Instead the term is considered to refer to a set of methods which facilitate the overt or covert observation of people in their everyday life, with the object of collecting whatever data are available to "throw light" on issues that form the focus of the research (Hammersley and Atkinson 1994).

4.9 *Specific considerations of observation as a method*

Observation is a widely used method of data collection in both qualitative and quantitative research (Pretzlik 1994). In qualitative designs, observation has been used to aid understanding and interpretation of cultural behaviour, using unstructured approaches developed in anthropological research (Silverman 2000; Robson 1993). The term 'unstructured' could be considered misleading, in that it implies an unplanned or unsystematic approach to observation. This is not usually the case, as researchers entering 'the field' generally have an idea of what they will initially observe (Mulhall 2003). In contrast to positivist designs in which structured observation enables the recording of instances of predetermined behaviour (Robson 1993), unstructured observation allows the researcher to refine their focus as the study progresses (Mulhall 2003). In the case of structured observation, the researcher's intention is to stand apart from those he or she observes. In unstructured observation, there are several roles which the observer can adopt, as distinguished by Gold (1958) whose typology is still referred to today (Burgess 1984). This typology ranges from the complete observer, who maintains distance,

concealment of role, and allows no interaction, to the complete participant who interacts fully within the social setting, but whose role remains concealed. Gold also identifies the observer-as-participant who gathers data by interviewing, supplemented by intermittent observation, and whose role is known, and also participant-as-observer whose role is primarily observation with involvement in the activities of the observed group, and again whose role is known. Roles one and two in this typology raise the ethically challenging issue of covert observation. The merits of this approach have been supported, in terms of lack of potential reactivity (Mays and Pope 1995; Clarke 1996) leading, in their view, to a purer quality of data. The adoption of distant and covert roles were not adopted in for this study, partly due to ethical considerations, and partly because of the need within the theoretical framework of the study to obtain views and explanations from the participants. The interaction inherent in overt participant methods is valued mainly in terms of its rapport building potential and its informal interviewing opportunities. As Lofland and Lofland (1995) point out when identifying what they consider to be the hallmarks of classic participant interaction: looking, listening, watching and asking. The constructivist ontology, which informs this study, assumes that it is impossible to separate the inquirer from the inquired-into (Guba and Lincoln 1989), and that researcher and participant are enmeshed in an interactive process of mutual influence (Martens 1998). Thus the researcher and participant, in the present study, engage in piecing together the participant's view of reality. This, according to the above argument, cannot be achieved using a system of observation which denies the explanatory input of those observed. In the present study therefore, the researcher must adopt either the participant-as-observer, or observer-as-participant role, as identified in Gold's (1958) typology. The role of the researcher, in the present study, could be described as participant-as-observer, although the dynamic nature of the role as acknowledged by Burgess (1984) is perhaps a more adequate description.

4.9.1 *Access*

Access to sites of potential interest to the ethnographer is frequently arranged through a contact person with suitable authority at that site. These persons, referred to in some texts as a 'gatekeepers', were, in the case of the present research, senior managers of the operating departments. As May (2001) points out, this carries certain unspoken implications, including the need for the researcher to act as the gatekeeper wishes, in order to maintain access to the site. The gatekeepers, in the case of the present study, introduced the researcher to the staff on two occasions during staff meetings, and as entry to the departments had been granted by the management, the researcher was initially viewed with suspicion as a possible informant to the managers. A considerable amount of time had to be devoted to allaying such fears in the initial weeks of observation.

4.10 *Sampling strategies*

In qualitative studies, cases are not selected on a random basis, as any attempt to do so would involve a sample of a size that would preclude intensive analysis (Silverman 2001). However as the purpose of random sampling in quantitative research is linked to the generalisability of the results. Bryman (1988) poses the question of how one can know the degree to which those observed, represent the population from which they are selected. Stake (1994) argues that there is no need to generalise beyond what he terms the 'intrinsic case' that is to say the particular case of interest in all its peculiarity or ordinariness. This view, that idiosyncratic explanations which extend no further than the case studied, are resisted by Mason (1996) who calls for explanations which are in some way generalisable, or have a wider resonance. Three methods of addressing this issue are suggested by Silverman (1985). The first of these involves combining qualitative methods with quantitative measures of population. Hammersley (1991) suggests obtaining information about relevant aspects of the population and comparing this to obtained findings. In this case Hammersley is referring to information drawn from the

literature. However in the case of the present study, the literature did not contain sufficient information for comparisons to be drawn.

The second suggestion offered by Silverman (1985), is to use purposive sampling, guided by time and resources, in which the most illustrative cases are chosen. This technique, he goes on to say, requires care in selection of the sample. In the case of the present study, information from the survey provided a useful resource and was used to inform the sampling process.

Finally, Silverman suggests theoretical sampling. Mason (1996) draws no distinction between theoretical and purposive sampling, seeing both as a set of procedures which feature manipulation of analysis, theory, and sampling activities in an interactive manner during the research process.

Thus, in the present research, the question of representation in the sample was achieved by ensuring that the professional groups identified in the phase one survey would also be included in the observational study. The UK literature (Timmons and Tanner 2004; Undre *et al* 2006), indicates that the staff recruited in both the survey and the observational samples, are characteristic in terms of profession, grade and number, of theatres in the UK. Therefore the results can be generalised with reasonable confidence to other settings which share similar characteristics. During the course of the observational study, concurrent analysis of the data led to theoretical sampling in which the researcher actively sought opportunities and situations which would confirm or disconfirm earlier findings.

4.11 *Data collection methods for observational study*

Having decided upon a sampling strategy, the method of recording field notes must be considered. Due to the nature of the clinical setting of this study, and in order to observe the requirements of ethical approval, written notes were not taken at the site of observation. Instead the sequence described by Lofland and Lofland (1995), of mental notes, jotted notes, and full field notes was employed. Similar systems have been described

by Sanjek (1990), and Bernard (1994), who suggest as a general rule, that jotted notes should be made inconspicuously, regardless of whether the researcher is known or unknown to the participants. Lofland and Lofland (1995) enlarge on this advice to say that when informally interviewing in the field, note taking, in addition to its obvious usefulness, is often expected by the participant and can convey the seriousness with which their views are taken.

Taking into account the suggestions of Robson (1993), Lofland and Lofland (1995), Burgess (1984) and May (1993), a two column approach was used for recording observational field notes. Information regarding the setting, time, and main actors was included in a header, whilst a narrative account was entered in the first of two columns, with interpretive commentary in the second. (see appendix 15). Informal interview notes taken in the field, were typed up as text documents, and included in the observation text to which they referred. A full description is included in the Chapter Three.

4.12 *The field*

Although from a realist perspective the field is a naturally existing entity which can be described via the neutral medium of the observer (Mulhall 2003), many ethnographers consider the field to be something which they themselves construct through the practical process of collecting data (Atkinson 1992). In short, the disciplinary interests and the personal world view of the researcher must influence their decisions of what to include and omit in the production of data. The two phase mixed-method design presented in this thesis enabled the researcher to use the results of the survey to identify the initial field of observation for the second phase. As the first phase had demonstrated that conflict mainly occurred in the immediate perioperative environment, and concerned the management of that environment, the initial field included all operating theatres within the two operating departments. Subsequent theoretical sampling following analysis of initial data, narrowed the field to operating theatres and specific lists which were likely to provide the required data.

4.12.1 *Field notes*

Methodological issues surrounding field notes are mainly concerned with validity (May 2001), particularly in regard to the way that the researcher, as the instrument of research, affects the direction and focus of the data collection. Sandelowski (1986) suggests an audit trail of the field notes as a means of addressing validity. However, as May (2001) suggests, this may be problematic as field notes represent a personal record of events which may include methods of documentation which would be unintelligible to a third party. As an alternative, an analysis of the decisions made during the period of observation is suggested by Clark (2000), which could, in the case of the present study, be derived from the theoretical memos described by Strauss and Corbin (1990) as part of the constant comparative method used in this study.

4.13 *Location*

As May (2001) points out, in selecting the location, the co-operative nature of the potential participants in a particular setting may be a deciding factor. This thinking is clearly in line with Spradley's five criteria for selection of sites (Spradley 1975): Simplicity, Accessibility, Unobtrusiveness, Permissibleness [sic] and Participation. One can intuitively appreciate that the more these criteria are met, the more attractive the site to the researcher. However the researcher must also be satisfied that, as in the present study, purposive or theoretical sampling can be accommodated.

Data for the present study were collected from two operating departments within the same NHS Trust. In similar designs, Lingard *et al* (2002a) used one hospital, as did Strauss *et al* (1964). Although they had chosen single sites, they observed several sub-sites within each, such as different operating theatres within the same department, or different sites within the same hospital. The purpose of choosing two sites in the present study was to ensure access to a wide variety of sub-sites, in this case individual theatres.

4.14 *Time*

Activities within social organisations may vary according to time (Burgess 1984), and hospital life, it could be argued, is particularly ordered by the clock. Meetings, meals, staff changeovers, and reports, all occur at designated times. This was noted by Strauss *et al* (1964) when studying the of social aspects of institutions, and the researcher must, as Burgess (1984) reminds us, decide upon whether to make continuous observations, or to employ some form of sampling. In the present study, the researcher was present in the theatre for entire operating lists, (usually four and a half hours), in order to record all communicative events, verbal and non-verbal, at the beginning and the end of the cases when most organisational decisions were made.

4.15 *Potential effects of the observer on data produced*

Reactivity, or the effect of the observer on those observed, requires consideration in the research design adopted in this thesis (Lee 2000). Mulhall (2003), in describing her own field experience, carried out in residential care homes for the elderly, considers the Hawthorne effect [sic] to be overemphasised in observational research. She continues by giving the broader view that;

"Once the initial stages of entering the field are past, most professionals are too busy to maintain behaviour which is radically different from normal".

(Mullhall 2003 p. 308)

Lee (2000), describes this phenomenon using the terms 'engrossment', to describe the extent to which people are occupied by what they are doing, and 'habituation', referring to the degree to which the participants have become accustomed to the presence of the observer. Reiss (1971) in his observation of police officers, and Gittelsohn *et al* (1997) found that there was an initial period in which the participants tried to present a sanitised version of their activity, which then declined as they reverted back to their usual behaviour. These examples of habituation, can be seen to indicate a

need for a period of integration on the part of the observer, of more than seven days (Gittlesohn *et al* 1997), in order for any such effects to occur and subside. In the case of the present study the researcher spent time in theatres and communal areas of the department, before and after the commencement of the formal period of observation.

In the clinical situation of the operating theatre, it could be anticipated that engrossment (Lee 2000), is likely to play a significant part in lessening reactivity, because of the nature of the work.

4.15.1 *The insider/ outsider position of the researcher.*

The relationship of the researcher to the topic of investigation presented in this thesis could be considered to place it in the category of ‘insider research’ (Hammersley and Atkinson 1994) due to the familiarity of the researcher with the research setting at the outset of the study. This situation has been variously viewed as problematic (Labaree 2002), and helpful (Mulhall 2003). However the application of such a label may be misleading.

Adler and Adler (1994) argue that being an ‘insider’ or an ‘outsider’ is not an achieved status, but rather dependent on situation, and that the researcher can move between these polar positions during the course of the observation session. The position of the researcher in the present study, as a theatre nurse observing activity in a theatre may seem clear on initial consideration. However, in practice the researcher’s relationship to the participants was demonstrated to be more complex. The researcher could be considered an insider to theatre and to theatre nursing, but not an insider to the ODP group, and particularly not to the medical profession, or to the various cultures of the hospital departments in which the observation took place. However, the advantages and disadvantages to this dynamic position can be identified within the present study. Having a greater understanding of the culture being studied has been cited as one of the main advantages of insider status (Bonner and Tolhurst 2002). As already stated, this could be considered to be particularly valuable in the

present study. An example of this, in terms of facilitating observation, was that the researcher's understanding of the importance which theatre nurses attach to the protection of the sterile field. The researcher adopted the practice of making clear to theatre staff that the concept of sterility was understood, and that it would not be compromised through lack of awareness on the part of the researcher. This resulted in a clear lessening of anxiety regarding the researcher's presence in the theatre. It is suggested in the literature that the 'insider' researcher has the advantage of being able to establish rapport with participants more rapidly (Bonner and Tolhurst 2002; Hewitt-Taylor 2002). However as Larabee (2002) illustrates in his study of aspects of shared governance, carried out within his own university, the researcher is seldom if ever an 'insider' to all the groups in the sample. Thus it may be more accurate to state that in the present study, the researcher could more readily establish rapport with the nursing staff, whilst remaining a relative 'outsider' to other professions.

The disadvantages of 'insider' research have been well documented (Gerrish 1997; Robson 1993; Hammersley and Atkinson 1994), most particularly the potential to miss what is important in routine practice, because of its familiarity, and failing to seek clarification supporting rationale. Recognition of this potential problem in the present study, led to a conscious seeking of explanations for actions and decisions, whenever the opportunity arose. Burgess (1984), includes in his discussion of interviewing in qualitative data gathering, the process of the researcher engaging in what he terms 'friendly exchanges' in the field, in order to better understand context during periods of observation. Indeed, West (1980) observed, in a review of sociological field notes;

"The bulk of participant observation data is probably gathered through informal interviews and supplemented by observation."

West (1980) p39.

However, the researcher's status as an 'insider' meant that such enquiries were frequently treated with suspicion, as assumptions on the part of the

participants about being judged on a professional level, occasioned the need for much reassurance.

Given the difficulties described above, in defining the researcher's status, attention was focused on recognition of the possible influences on the production of data in this study. Thus, following the advice of Miles and Hubermann (1994), and Gerrish (1997), efforts were made to reflect, through personal memos concerning reactions to events and situations, and to critically examine assumptions made during data collection and analysis. An illustrative example of a personal memo which reflects on the problem of being perceived in a way that compromises 'openness' is given below:

..Need to be really careful in phrasing questions (and choice of time to introduce them) re: whether staff are being /feel the need to be supervised. Get the feeling that they are wary of this. Have to avoid making it sound as though I've noticed a need for supervision. Next Wednesday going to try more "how do you organise your work" type questions and see what comes out. Have asked [gatekeeper] not to come and "see how I'm getting on" in attempt to appear as neutral as possible. This supervision/ non-supervision, seems linked to Leadership, management style, avoidance, There are also suggestions made that team work and supervised work are polar opposites.

4.16 *Ethical issues in observational research*

The ethical issues involved in observational research, and in particular those concerned with consent, can present the researcher with problems in obtaining formal ethical approval for such studies. Moore and Savage (2002) highlight the difficulties which can be encountered in satisfying ethical committee requirements for obtaining formal consent from all those who may enter the field, whilst at the same time attempting to establish and maintain rapport. As Fetterman (1989), and Mullhall (2003) point out it is difficult to know how informed all the potential participants can be in a setting where people enter and exit the field for brief periods.

In addition, it can be difficult, Fetterman suggests, to know the extent of consent. When participants agree to be observed in their work place, permission may not extend to observation of them 'chatting' informally to colleagues in the work environment. As Mulhall (2003) states, it can be difficult to state precisely what will be observed in some observational studies, who will be included, and the scope of observational possibilities that they are actually agreeing to. Much time and energy can be spent in trying to satisfy prescriptive ideals of ethical practice, which although laudable in their intent can, as Moore and Savage (2002) point out, preclude the proper and careful consideration of social reality. The practicalities of overcoming these problems are discussed in Chapter Four.

The arguments presented above, concerning the interaction of the researcher and the participant, become part of the ethical considerations of observational study, and in particular when the researcher is observing in their own field of expertise. The view that researchers cannot comprehend the situation of interest as though it were uncontaminated by their presence, is frequently to be found in methodological texts. Indeed, ethnography is considered to benefit from engagement with the participants, and, as Hammersley and Atkinson (1994) state, being part of the social world we study, is not a measure of methodological commitment, but a statement of existential fact, and therefore the interaction between the observed and the observer must occur in all but covert designs. The ethical dilemma associated with the degree of participation, has a particular resonance within this study. In the case of the researcher who is observing in the field of his or her own expertise, the extent of participation is a matter of both ethical and professional discretion. In the case of the nurse observing in the clinical area, the Nursing and Midwifery Council (2004) stipulate within their code of conduct, that the interests of the patient must remain paramount at all times. When the nurse adopts the role of researcher, he or she does not step outside the regulatory guidelines of their professional body. Thus even though the researcher may wish to collect data on how staff deal with an adverse incident, he or she may not refrain from intervention, if the

best interests of the patient are at stake. On a more subtle level, if the researcher is honest with participants regarding his or her experience and qualifications, with a view to fostering trust and acceptance, it is possible that in the absence of alternative persons, he or she may be approached for advice. An ethical dilemma then exists as to whether to withhold advice, and allow an adverse situation to ensue, or to give advice and terminate the observation session. On the rare occasions that such a situation occurred in the present study, questions were usually re directed to a permanent member of staff.

4.17 *Evaluation of ethnographic studies*

Criteria for the evaluation of ethnographic research (Hammersley 1991), and for qualitative research (Silverman 2001) have been presented, although Silverman argues that it is possible to evaluate the credibility of qualitative and quantitative work using one set of criteria. Silverman (2001) dismisses arguments that reliability lacks relevance outside the context of positivist work, because the evolving nature of the observed world precludes replicability as a measure. Instead he suggests that reliability can be assessed by ensuring that observations are recorded in the most concrete manner, using verbatim accounts where possible, and providing transparency regarding both process and the researcher's influence. Thus, in the present study, observational and interview notes were made as soon after the event as practicable and direct quotations were recorded in the notes wherever possible.

4.18 *Theoretical stance*

In order to make full use of the data produced in this study and relate it to the overarching framework of team work, Layder's (1998) Adaptive Theory was selected. This enabled a Grounded Theory (Strauss and Corbin 1990) approach to analysis of the qualitative data. A potential problem with the use of Grounded Theory in this case, is its requirement for the exclusion of all pre-existing concepts in the process of analysis. It can be argued that to exclude all such concepts is a considerable problem, particularly for researchers working on a focused problem. Layder (1998)

offers a solution in proposing an intermediary approach which he has called “Adaptive Theory.” This approach recognises the value of being grounded in the situation, whilst also acknowledging the value of existing theoretical ideas and frameworks. Layder proposes a continuous dialogue between the situation and theory. Adequacy of the theory is measured in two ways. Subjective adequacy is assessed by constantly testing the participant’s recognition of the concepts and definitions arrived at through analysis. Analytic adequacy is tested by attempting to tie the subjectively adequate concepts to the conceptual and empirical literature. This approach permits deductive and inductive elements within the study, which follow the sequential design of the research and allow a deductive approach to inform the survey, an inductive approach to analysis of the ethnography, and a deductive treatment of all contributory data. Although such designs remain contentious it can be argued that they are in keeping with the pragmatic approach adopted within this thesis as a means of addressing the multi-layered nature of practical problems in the work place (Patton 1988; Pawson and Greenhalgh 2004; Mason 2006).

The analysis process adopted in this thesis is concurrent with data collection, and guides theoretical sampling. It follows the constant comparative technique of Grounded Theory, and retains features such as memoing. Layder takes a somewhat broader approach to initial category development than the line-by-line system traditionally associated with constant comparative techniques. An illustrative section of a coding sheet is presented in appendix 16.

4.19 *Conclusion.*

The mixed method approach adopted in this thesis, has informed the approach taken to addressing its central questions, of how professionals working in the specific context of the operating theatre construct meaning from their day to day work interactions. An ethnographic approach has enabled an exploration of the tacit knowledge and rationalisation behind apparently routine work practice through the production and analysis of data in the context of the work environment. The method of analysis

chosen, facilitated an on-going constant comparative method which in turn informed theoretical sampling as a means of locating disconfirming activity. A case is made for taking a multidimensional mixed method approach to incorporate data collected from what have traditionally been considered separate paradigms, in order to fully address the central themes of the thesis. Objections to such an approach on the basis of methodological purity (Guba and Lincoln 1989), have been considered, and rejected in line with current arguments in favour of adapting methodology to fit the research question rather than allowing the methodology to adapt the question (Patton 1988; Mason 2006). The adequacy of this approach to answering the central questions of the thesis is demonstrated in Chapter Seven.

The potential advantages and disadvantages of ‘insider’ research have been discussed as they apply to the present study, and the measures taken in response to these described.

This thesis engages with the methodological debates surrounding the use of surveys and observational studies, and with their innovative use as a mixed method. It also contributes to the body of ethnographic work on service delivery and organisation in the health setting, by offering a description of multidisciplinary working in NHS operating theatres in the immediate perioperative period. This builds on previous international work which has focused on specific aspects of work organisation in the same context.

The research design adopted in this thesis makes use of two distinct methods in order to collect data which could adequately address the full scope of the research questions. Although the research aims were unified under the common theoretical framework of team working, each presented specific challenges to successful implementation.

A full description of the results of the phase one survey, and the findings of the subsequent ethnographic study are now presented in Chapters Five and Six respectively.

CHAPTER FIVE

RESULTS OF PHASE ONE

This chapter presents the results of the postal survey which formed the first phase of the mixed methods approach adopted in this thesis. The purpose of the survey was to address the initial research questions of the study, specifically; to identify the extent to which reports of conflict, which appear in the international literature (Rosenstein and O'Daniel 2006; Booij 2007; Lingard *et al* 2002a, 2005b), apply to NHS operating theatres in the United Kingdom, to discover the main sources of conflict, and to identify the main professional groups involved. The data produced by this means, provided an indication of the usefulness of the research on a national basis, as well as information about the situations and staff involved. This in turn guided the design of the observational component of the research. A national survey was therefore undertaken in order to explore the nature and geographical spread of these phenomena in operating departments in England.

The survey forms the first of two separate but complementary phases of data collection and analysis. The second phase was designed as a qualitative observational study to seek clarification of the findings of the survey. This chapter will present the findings of the initial survey phase of the study, starting with an overview of the main findings, followed by a descriptive and statistical analysis of the data.

5.1 *The sample*

The survey considered the views of: surgeons; anaesthetists; theatre nurses; and ODPs in a sample of NHS operating departments drawn randomly from the eight NHS regions in England. These groups of staff were chosen because they all contribute directly to patient care in the operating theatre in England and because the literature suggests that discord exists between staff in this setting due to differing perceptions entertained by each towards their professional roles (Hudson 2002).

Table 5.1 summarises the sample by professional group. This table details the full range of respondents. However, for the purposes of analysis, some of the professional groups were amalgamated because numbers were small. An example of such an amalgamation is the formation of one nursing group from enrolled and registered nurses. A total of 391 questionnaires were returned.

TABLE 5.1. RESPONSES FROM PROFESSIONAL GROUPS

Job Title	n	%
Registered Nurses	219	56
Operating Department Practitioners	70	17.9
Enrolled Nurses	8	2
Consultant Surgeons	24	6.1
Registrars/Senior Registrars in surgery	8	2
House officers in Surgery	6	2
Consultant Anaesthetists	39	9.9
Registrars/Senior Registrars in Anaesthetics	10	2.5
House Officers in Anaesthetics	7	1.7
Total	391	100

5.2 *Summary of main findings*

Half of the survey respondents reported experiencing aggressive behaviour from consultant surgeons (53.4% $n=209$). Daily disagreements between nurses and consultant surgeons, regarding list management issues were reported. Perceptions of a lack of understanding of roles and of shared goals for patient care between the professional groups were also reported. Similar reports were received from all geographical locations within the sample.

In order to provide a structure for the chapter, recruitment and description of the sample will be described, followed by the key findings of the survey, organised under the following headings;

- | | |
|--------------------------------|---|
| 1. Perceptions of disagreement | 4. Preferred methods of dealing with aggression |
| 2. Sources of disagreement | 5. Contribution of the multidisciplinary team |
| 3. Perceptions of aggression | 6. Shared goals for patient care |

5.3 *Inclusion criteria*

To meet the inclusion criteria for the survey, the operating departments had to be within the NHS in England catering for a range of surgical specialities. Hospitals catering for specific client groups such as women or children or for a single surgical speciality (such as orthopaedics or cardiovascular surgery) were excluded. The protocol for inclusion is given as appendix 6. Specialist hospitals were excluded on the grounds that they typically perform a narrower range of surgery than non-specialist hospitals. The decision was arrived at due to the possibility that such departments are more adapted to cater for specialist surgery and are therefore less exposed to the organisational problems involved with catering for more than one speciality per day.

Clinical staff eligible for inclusion were nurses and ODPs and medical staff currently employed in permanent clinical posts, or employed on a locum basis for more than one month at the time of the study. All grades of staff were included, from the clinical areas of surgery, anaesthetics, and recovery.

5.4 *Recruitment of respondents*

The senior manager in each department in the sampling frame was contacted by telephone to establish agreement in principle to participate in the survey. The names of departments where senior managers were not willing for their staff to take part were replaced with a corresponding department from a back-up list. Five substitutions were eventually made, resulting in a master list of participating departments. Letters, with detachable slips to indicate agreement or otherwise to participation were then dispatched to the theatre manager and the medical director of each department. It was not possible to contact employees directly because the Data Protection Act (1998) in the UK prevents researchers contacting

potential respondents directly. On receipt of an agreement slip, batches of questionnaires were sent to theatre managers and medical directors with a request to distribute them to eligible staff. As the number of eligible staff in each department was unknown, 20 questionnaires were sent to each. This number was reached following initial discussions with the theatre managers. Appendix 17 shows a schematic representation of the sampling system.

5.5 *The questionnaire*

The questionnaire was arranged in seven sections designed to collect demographic information, perceptions of disagreements, perceptions of aggression, preferred methods of dealing with aggression, perceptions of inclusion in multidisciplinary meetings, and reports of appreciation of professional role and goals for patient care, by colleagues outside the professional group of the respondent. A more detailed description of the questionnaire design and content is described in Chapter 4.

Before analysis of the data, a comprehensive retrospective review was made of health related press releases made over the period of data collection. This measure was taken in order to identify any government report, or report from professional bodies relating to the NHS workforce, which could have had an influence on climate or perception of self-worth at any point during the period of data collection, and which could have influenced responses. No such reports were identified.

5.5.1 *Analysis*

Pre-coded data from the questionnaire were entered into Minitab for Windows version 13. Descriptive and bivariate statistical analysis were undertaken. Level of statistical significance was taken at 5%.

5.5.2 *Response rate*

Sixty nine departments were approached. Managers in 62 (89.8%) of these expressed willingness to participate and were sent questionnaires. These were returned from 37 (59.6%) departments after two reminders. It was not possible to follow up non-responders because their identity was

unknown. Response rate for individuals could not be calculated because the number of potential respondents in each department was unknown. Numbers received from the different professional groups are presented on Table 1.5. The mean number of questionnaires returned from each department was 9.5 (SD = 4.9).

5.6 *The operating departments.*

The operating departments initially selected, varied in the number of operating theatres they had, and whether or not they had an accident and emergency department. The presence of an accident and emergency department may be significant in that it could be considered to lead to a greater amount of unscheduled operating than might be found in departments where this facility is not present. As Astbury (1988) points out, unscheduled operating requires a greater degree of interaction and negotiation, with its associated potential for stress and conflict. It was therefore decided to exclude those departments with, accident and emergency facilities, where unscheduled operating could be expected.

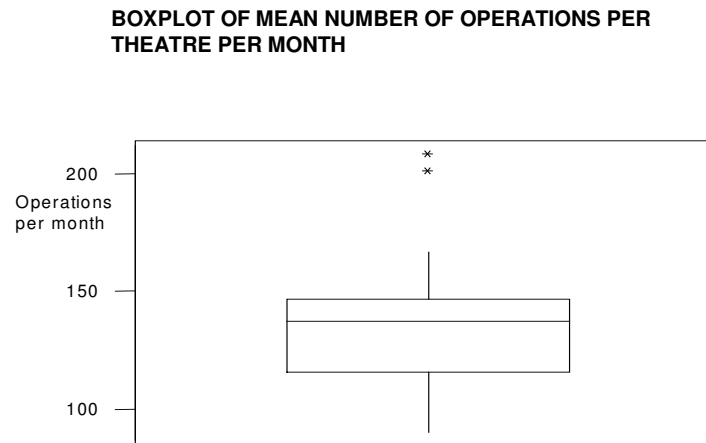
It could also be considered that busier operating departments might cause greater stress to those working within them, and that this may influence perceptions of aggressive behaviour and conflict (Davies 1989; Pape 1999) Therefore data were collected to assess the variation between the participating departments in this respect. The mean number of operations per month for each theatre was calculated by dividing the total number of operations per department per year, by the number of theatres within that department, and then dividing the result by 12. The means for all departments could then be compared, and the variation calculated. The results are given in table 5.2.

TABLE 5.2 SHOWING MEAN NUMBER OF OPERATIONS PER THEATRE PER MONTH IN PARTICIPATING DEPARTMENTS

MEAN	MEDIAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
123.64	118.55	29.03	81.78	201.38

Analysis of the numbers of operations carried out in each of the departments in the sample, revealed that the workload was similar in each case. Figure 5.1 summarises the results as a box plot, illustrating the mean, and variation in number of operations per theatre per month in participating departments. The outliers are explained by the inclusion of outpatient operating procedures in numbers reported by two centres.

FIGURE 5.1



5.7 *Perceived frequency of disagreement*

Section two of the questionnaire asked the respondents to report their perception of disagreements, which had occurred over the previous six months. The term disagreement was defined within the questionnaire as; *Parties holding conflicting views which cannot be reconciled there and then*. Disagreement, of this description, between surgeons and theatre nurses was reported by 69% ($n=273$) of respondents. Disagreements between theatre staff (nurses and ODPs) and ward nurses were reported by 57.8% ($n=226$). Disagreements between theatre nurses and ODPs, within their combined professional group, were reported by 52.2% ($n=204$). Table 4.5 summarises the reported perceptions of disagreement by staff group, and reveals disagreement to be highest between surgeons and nurses, between theatre staff and ward staff, and within the nursing and ODP professional groups. The results are summarised in table 5.3.

TABLE 5.3 SHOWING PERCEPTION OF DISAGREEMENTS WITHIN THE LAST SIX MONTHS WITHIN AND BETWEEN PROFESSIONAL GROUPS

Responses Obtained from all Professional Groups in the Sample	Number	%
Those who perceived disagreements between surgeons and nurses/ODPs	273	69.82
Those who perceived disagreements between theatre staff and ward staff	226	57.80
Those who perceived disagreements between nurses and ODPs and other nurses/ODPs	204	52.17
Those who perceived disagreements between anaesthetists and nurses/ODPs	191	48.85
Those who perceived disagreements between medical staff and other medical staff	189	48.34
Those who perceived disagreements between senior managers and nurses/ODPs	161	41.81
Those who perceived disagreements between line managers and nurses/ ODPs	184	47.06

When considered by professional group, 71% of medical respondents ($n=67$) and 72% of theatre nurses ($n=164$) reported that disagreement took place between surgeons and theatre nurses. This perception was not influenced by length of time employed in theatre, which operating department setting staff worked in (operating room, recovery or anaesthetics) or seniority.

Table 5.4 shows the similarity of perception of disagreements between surgeons and the nursing/ODP group, received from nursing and medical respondents. Although not statistically significant, a lower perception is reported by the ODP group, $\chi^2=3.933$, $df=2$, $p<0.140$

TABLE 5.4 PERCIEVED DISAGREEMENTS BETWEEN SURGEONS AND NURSES/ODPS BY PROFESSIONAL GROUP

	NURSES		ODPs		MEDICAL STAFF		TOTAL	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
AWARE OF DISAGREEMENT	164	72.25	42	60.00	67	71.28	273	69.82
UNAWARE OF DISAGREEMENT	63	27.25	28	40.00	27	28.72	118	30.81
TOTAL	227	100	70	100	94	100	391	100

5.8 Sources of disagreement

The main sources of disagreement were related to operating list management. Specific sources were: over-running of the operating list; changes to the order; and availability of staff and equipment .

Table 5.5 summarises the responses of all participants for items relating to sources and frequency of disagreements.

TABLE 5.5 PERCEIVED DISAGREEMENT ON THE FOLLOWING ISSUES REPORTED BY ALL PROFESSIONAL GROUPS WITHIN THE SAMPLE (*n*=391)

Potential sources of disagreement	Total responses	Daily or Weekly		Monthly or Yearly	
		<i>n</i>	%	<i>n</i>	%
Overrunning of Lists	367	331	90.19	36	9.81
Changes in List Order	336	296	88.10	40	11.90
Availability of Theatre Time	351	305	86.89	46	13.11
Availability of Theatre Staff	346	276	79.77	70	20.23
Availability of Surgical Team	323	253	78.33	70	21.67
Availability of Equipment	350	242	69.14	108	30.86
Seniority of Senior Surgeon	282	128	45.39	154	54.61
Different Interpretation of Hospital Policy	103	112	38.89	176	61.11
Precautions Taken for Certain Cases	298	114	38.25	184	61.75

Over-running of the operating list was identified as the most common reason for disagreement (90.2%, $n=331$) and was perceived to occur at least weekly, with half the sample suggesting that it was a daily occurrence (55%, $n=202$). Nurses were much more likely to report disagreement arising from late-running operating lists than medical staff or ODPS ($\chi^2=21.357$ 4df $p<0.001$). Changes to the order of the operating list were reported to be a daily occurrence by 88.1% ($n=336$) respondents. The majority of these were nurses (70.6%, $n=120$ $p<0.001$). ($\chi^2=22.711$ 4df $p<0.001$). See table 5.6.

TABLE 5.6

PERCEIVED DISAGREEMENTS BETWEEN NURSES/ODPS AND SURGEONS REGARDING OVERRUNNING OF LISTS BY PROFESSIONAL GROUPS

	NURSES		ODPS		MEDICAL STAFF		TOTAL	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
AWARE OF DAILY DISAGREEMENT	138	62.44	35	56.45	29	34.52	202	55.04
AWARE OF WEEKLY DISAGREEMENT	63	28.51	24	38.71	42	50.00	129	35.15
AWARE OF LESS FREQUENT DISAGREEMENT	20	9.05	3	4.84	13	15.48	36	9.81
TOTAL	221	100	62	100	84	100	367	100

$\chi^2=21.357$, $df=4$, $p<0.001$

5.9 Perceptions of aggressive behaviour between professional groups

Table 5.7 reveals that 53% ($n=209$) of all respondents reported that they had experienced aggressive behaviour from consultant surgeons within the last six months. In contrast, 33.5% ($n=131$) reported aggressive behaviour from consultant anaesthetists. Rates of 31.7% ($n=124$) and 14.1% ($n=55$) were reported from registrars and senior registrars respectively.

Of those respondents who consider themselves to have been the recipients of aggression from consultant surgeons, the nursing and ODP groups reported a much higher perception than their medical colleagues, as summarised in table 5.7.

TABLE 5.7. REPORTED PERCEPTION OF AGGRESSION RECEIVED FROM CONSULTANT SURGEONS BY PROFESSIONAL GROUP

	NURSES		ODPS		MEDICAL STAFF		TOTAL	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
HAVE EXPERIENCED AGGRESSIVE BEHAVIOUR IN PAST SIX MONTHS	136	59.91	42	60.00	31	32.98	209	53.45
HAVE NOT EXPERIENCED AGGRESSIVE BEHAVIOUR IN PAST SIX MONTHS	91	40.09	28	40.00	63	67.02	182	46.55
TOTAL	227	100	70	100	94	100	391	100

$$\chi^2=20.815, df=2, p<0.001$$

5.10 Preferred methods of coping with aggression

Table 5.8 reveals that the most favoured approach of dealing with aggressive behaviour for the sample overall was stated to be confrontation with a view to resolution (65.5%, $n=256$).

TABLE 5.8. PREFERRED METHODS FOR DEALING WITH AGGRESSION

Responses from all Professional Groups $n= 391$		
Preferred method of dealing with aggression	<i>n</i>	%
Confront and sort out problem	256	65.47
Discuss problem with colleague	188	48.06
Discuss problem with manager	176	45.01
Avoid confrontation	97	24.81

$p<0.001$). ($\chi^2=20.279$ 1df $p<0.001$).

When reported ways of coping with aggression were examined in detail it was apparent that medical staff would be less likely to discuss the experience of receiving aggression than other groups (24.7% $n=23$)

5.11 *Contribution of the multidisciplinary team*

Across all professional groups 19.6% ($n=76$) respondents considered that their own contribution to the multidisciplinary team was fully understood by colleagues belonging to the other professional groups. See table 5.9.

TABLE 5.9. PERCEIVED UNDERSTANDING OF ROLE BY MEMBERS OF OTHER PROFESSIONAL GROUPS

Responses from all Professional Groups $n= 391$		
	<i>n</i>	%
Partly understand	237	61.08
Fully understand	76	19.59
Do not understand well	66	17.01
Do not understand at all	9	2.32

Medical staff were most likely to perceive their contribution to be explicit (36.6% $n=34$) compared to nurses or ODPs. 61.1% ($n=237$) of the sample overall thought that others partly understood their role, whilst 19.3% ($n=75$) thought their role was poorly understood or not understood at all by others. Respondents who reported receiving aggression from consultant surgeons were more likely to also report that their role was not well comprehended by colleagues belonging to other professional groups (69.3%, $n=52$, $p < 0.003$), as summarised in table 5.10.

TABLE 5.10. REPORTED PERCEPTION OF AGGRESSION RECEIVED FROM CONSULTANT SURGEONS BY PERCEIVED UNDERSTANDING OF ROLE BY OTHERS

	ALWAYS		PARTLY		NEVER/ SOMETIMES		TOTAL	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
HAVE EXPERIENCED AGGRESSIVE BEHAVIOUR IN PAST SIX MONTHS	32	42.11	124	52.32	52	69.33	208	53.61
HAVE NOT EXPERIENCED AGGRESSIVE BEHAVIOUR IN PAST SIX MONTHS	44	57.89	113	47.68	23	30.67	180	46.39
TOTAL	76	100	237	100	75	100	388	100

$\chi^2=11.659$, $df=2$, $p < 0.003$

A similar relationship did not emerge between reports of aggression from other professional groups and lack of comprehension. There was also a highly significant association between respondents who perceived disagreement concerning over-running of the operating list to occur on a daily basis and who additionally perceived their goals for patient care were either never or only sometimes shared by other professional groups ($\chi^2=18.326$ 4df $p<0.001$).

Staff reporting disagreements about the list order on a daily basis were also more likely to be those perceiving their role to be poorly understood or not understood, as shown in table 5.11 ($\chi^2=11.735$, 4df $p<0.019$).

TABLE 5.11 DEGREE OF PERCEIVED UNDERSTANDING OF ROLE BY THOSE WHO PERCEIVE DISAGREEMENTS BETWEEN SURGEONS AND NURSES/ODPs OVER CHANGES IN LIST ORDER

	FULLY		PARTLY		NOT WELL/NOT AT ALL		TOTAL	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
AWARE OF DAILY DISAGREEMENT	28	45.16	97	47.78	44	64.71	169	50.75
AWARE OF WEEKLY DISAGREEMENT	30	48.39	79	38.92	15	22.06	124	37.24
AWARE OF LESS FREQUENT DISAGREEMENT	4	6.45	27	13.30	9	13.24	40	12.01
TOTAL	62	100	203	100	68	100	333	100

$\chi^2=11.735$, df=4, $p<0.019$

5.12 *Shared goals for patient care*

A fifth of the sample overall (20.4%, $n=79$) thought that they always shared a common goal for patient care with other professional groups in the operating theatre. See table 5.12.

TABLE 5.12. PERCEIVED DEGREE TO WHICH PATIENT CARE GOALS ARE SHARED BY MEMBERS OF OTHER PROFESSIONAL GROUPS

Responses from all Professional Groups n= 391		
	<i>n</i>	%
Mostly	23	60.82
Always	79	20.36
Sometimes	71	18.30
Never	2	0.52

However, significantly fewer nurses (15.9%, $n=37$) than medical staff (26.6%, $n=25$) believed they shared a common goal ($\chi^2 = 13.697$ 4df $p < 0.008$)

Of those respondents who perceived disagreement between the operating department and the wards, significantly fewer considered their goals for patient care to be shared with their colleagues.

($\chi^2 = 11.686$ 2df $p < 0.003$)

Those respondents who thought they did not share a common goal for patient care with colleagues from other professional groups were also more likely to report a higher perception of receiving aggression, although this finding was not statistically significant.

5.13 Conclusion

The results presented in this chapter provide empirical support for the claims of interprofessional conflict in the operating theatre which appear in the anecdotal and small scale research studies reported in Chapter Two. In particular, this phase of the study has established that conflict in operating theatres is widespread, with little variation detected across a national sample. The issues around which conflict was seen to manifest within the survey, were specifically in relation to changes to the organisation of the operating list. The survey also revealed that episodes of conflict were reported to occur on a daily basis, mainly between the two main professional groups involved in the delivery of surgical intervention; consultant surgeons and nurses.

In Chapter Three, section 3.7 a description is given of the measures taken to address general limitations of data collection by postal survey (Robson 1993; May 2001). However, the survey data in the present study remains compromised due to the method used to obtain the sample. Constraints imposed by the Data Protection Act (1998) and local policy within participating sites, necessitated reliance on a third party for the distribution of the questionnaires. As a result the sample was not considered to be random. However, the sample was drawn from all the major regions of England, and was inclusive of all the different categories and grades of theatre staff employed in the UK. Statistical advice obtained during the course of the survey allowed confidence to be placed in the typicality of the findings as characteristic of theatre working across the country rather than as a consequence of local influence.

Although the survey establishes the widespread nature and frequency of conflict in operating theatres between key professional groups, and identifies the central issues of contention to be the management of the operating list, further investigation was required in order to address the main research questions of the study. To assess the impact of the conflict described in the survey on the work of the operating team, and to be able to describe work organisation in relation to the team concepts discussed in the literature review, a second phase of research was undertaken. In the following chapter the second phase of the study is described, in which detailed data were produced through periods of observation supported by informal interviews with the staff involved. Thus, through an ethnographic study of operating theatre working practices, a description of the way in which the work of the operating theatre is organised within the team was produced, together with an exploration of the context of the conflict described in the first phase of the study on that work. An explanatory model of the factors found in operating theatres, which give rise to conflict, is produced in order to improve understanding and knowledge of the systemic causes of conflict.

CHAPTER SIX

FINDINGS OF ETHNOGRAPHIC STUDY

The first phase of this study, identified themes of aggression and disagreement in the operating theatre to be widespread across the sample. It also identified the general subjects of disagreements, and the main protagonists. However, as this initial phase was designed as a descriptive survey, no explanation for these findings could be provided.

In order to seek explanations for the survey findings, a qualitative study was designed. The findings of the subsequent observation study provided a large amount of rich data which were analysed using Layder's (1998) Adaptive Theory approach. From the results a detailed picture of work organisation in the operating theatre, and the associated causes and effects of conflict was obtained.

The key findings of the second phase of the study were the routinisation of work in the operating theatre, minimising of communication, lack of correspondence between grade and work, separatism of professional groups, and the centrality of interdependence in operating theatre work. These themes will be demonstrated throughout the chapter.

The chapter opens with an account of the demographic details of the sample, starting with a detailed description of the duration and location of the periods of observation and informal interviews, followed by the professional representation within the sample. In order to provide orientation to the reader, there follows a description of the typical work sequence of the operating theatre, produced from the observation data. The remainder of the chapter is devoted to the presentation of the findings of this phase of the study.

6.1 *Demographic details*

The data collection for this phase of the study was undertaken in the operating departments of two London hospitals, over a period of 9 months between September 2005 to May 2006. Table 6.1 summarises the hours of observation undertaken at each site, which totalled 60.5.

TABLE 6.1 HOURS OF OBSERVATION IN EACH LOCATION

Date	Hospital	Hours	Start Time	Finish Time
03/09/05	A	4.0	13:30	17:30
06/09/05	A	4.5	08:00	12:30
07/09/05	A	5.0	08:00	13:00
10/01/06	B	6.0	08:00	14:00
23/03/06	B	4.5	08:00	12:30
28/03/06	B	6.5	08:00	14:30
04/04/06	A	7.0	08:00	15:00
11/04/06	A	4.0	08:00	12:00
18/04/06	B	8.0	08:00	16:00
02/05/06	B	4.5	08:00	12:00
23/05/06	A	6.5	08:00	14:30
Total		60.5		

Site A, comprised a suite of 12 theatres including an emergency theatre. The theatre suite was set in a nineteenth century building, and had undergone recent modernisation. It now represented a large department spread over two floors. Site B, in contrast, was a smaller suite of 9 theatres where only elective surgery was undertaken. It was situated in a more modern building and was arranged on a single level.

During the periods of observation, informal interviews were conducted with staff, in order to obtain their explanations of the activity observed. A total of 27 informal interviews were conducted during the course of the observation period. The number of interviews and the participants involved are presented in table 6.2

TABLE 6.2

INFORMAL INTERVIEWS CARRIED OUT DURING OBSERVATION PERIOD				
Hospital	Data Code	Grade	Prof Group	Unique ID
A	030905	E	Nurse	AE1
A	060905	G	Nurse	BG1
A	070905	-	-	-
B	100106	Consultant	Anaesthetist	DONSANAES
B	100106	E	Nurse	D1
B	230306	HCA	HCA	ECA1
B	230306	E	Nurse	E1
B	230306	E	Nurse	E2
B	280306	Consultant	Surgeon	FONSSURG
B	280306	E	Nurse	F1
A	040406	G	Nurse	G1
A	040406	ODP	ODP	GDP1
A	040406	Consultant	Anaesthetist	GONSANAES
A	110406	E	Nurse	H1
A	110406	Registrar	Surgeon	HEGSURG
A	110406	G	Nurse	H1
A	110406	Consultant	Surgeon	HNSSURG
B	180406	F	Nurse	I1
B	180406	Consultant	Anaesthetist	IONSANAES
B	180406	G	Nurse	I1
B	020506	D	Nurse	J1
B	020506	E	Nurse	J1
B	020506	Registrar	Surgery	JEGSURG
A	230506	ODP	ODP	KODP1
A	230506	G	Nurse	KG1
A	230506	Registrar	Surgery	KSURGREG
A	230506	E	Nurse	KE1

Participants observed included all grades of nurses, operating department practitioners and healthcare assistant staff, and all grades of surgeons and anaesthetists. The numbers and grades of staff are summarised in tables 6.3 and 6.4.

TABLE 6.3. NURSES, ODPS AND HCAS REPRESENTED IN THE SAMPLE

Site	G	F	E	D	ODP	HCA	Total
A			2		1	1	4
B	1		3	1			5
C	1		3			1	5
D	1		3			1	5
E	1	1	1				3
F		1	1		1	1	4
G	1	1	2				4
H	1		2		1	1	5
I	1	1	2		1		5
J			3	2			5
K			5		1	1	7
	7	4	27	3	5	6	52

TABLE 6.4. SURGEONS REPRESENTED IN THE SAMPLE

Site	Consultant surgeon	Senior Registrar	Registrar	House Officer
A	1	1		1
B	1	1		
C	1	1		
D	1	1		
E	1	1	1	
F	1	1	1	
G	1		1	1
H	1	1		
I	1	1	1	1
J		1		1
K	1	1	1	
Total	10	10	5	4

Detailed comparison of the notes for all the observed sessions, allowed the construction of a typical work sequence for an operating session. A concise version of this sequence is first presented in order to provide the context for a detailed description of the findings which follow.

6.2 *Typical work sequence from the observed operating sessions*

The theatre staff, both nurses and operating department practitioners, arrived at various times in the theatre to which they had been allocated. They proceeded to check, clean, and position the furniture and equipment of the theatre. This work was undertaken by all persons present, irrespective of grade, and appeared to the observer to follow no particular sequence. The staff seemed to gravitate towards which ever tasks were seen to require their attention. Attempts to organise the work in terms of allocation of persons to specific tasks, or sequence of priority were rarely seen, as were any verbal communications in the course of the preparations. Staff appeared instead to move intuitively to their work.

The checking and preparation of the theatre reflected similar activity on each occasion. The operating table and trolleys were wiped with damp cloths, equipment, including diathermy, suction, and lighting were tested, and prepared for use. The checking of these items did not follow a pre-determined checklist, instead staff appeared to prepare them to their own satisfaction. Instruments and equipment were prepared in the laying up area for the cases on the list. Instrument sets and their accompanying supplementary items were placed on trolleys in readiness. Staff used a card system to assist them in this element of preparation, as an *aide-memoire* of the surgeon's requirements.

During this period, the anaesthetic assistant, either a nurse or an operating department practitioner, prepared and tested the anaesthetic equipment, both in the anaesthetic room and in the theatre. It was unusual for there to be any communication between the anaesthetic assistant and the theatre staff as they proceeded with their various preparations.

Once all was prepared to the satisfaction of those present, the next step was to await, or locate, the surgeons. It was unusual for any action to be taken to get the operating list underway until the surgeons had been seen. This was usually due to a lack of certainty regarding the composition of the operating list. It was recognised that the surgeon may make changes

to the order for a variety of reasons, and it was therefore considered unwise to send for the first patient as advertised on the list, in case the order had been altered.

Once the list order had been verified with the surgeon, the first patient was sent for, usually, but not always, by the anaesthetic staff. The theatre scrub staff negotiated between themselves, to establish who would scrub for the first case. No formal allocation of cases to personnel was seen during the period of observation. The practitioner who had agreed to scrub for the first case prepared to scrub and don sterile gown and gloves, and the practitioner who had, by default, taken the circulating role went to the laying-up room to open the sterile instrument packs, and assist the scrub practitioner to lay up the trolley. This process appeared to follow a routine structure in nearly all cases, regardless of the theatre or staff. First the circulating person assisted the scrub practitioner to complete the donning of the sterile gown, and then handed sterile items to the scrub practitioner, using an aseptic technique. Once the trolley was prepared, swabs, instruments and other items were counted, and the results of this counting are marked up on a board.

During this time, the anaesthetist and the anaesthetic assistant were engaged in anaesthetising the patient. When the surgeons arrived in the theatre, they tended to remain in their own group. There was little communication between the surgeons and the theatre staff, and that which was observed was of a light and inconsequential nature. Although discussion of the cases on the list was seen to occur, it was by no means the norm.

When the patient was wheeled into theatre, the mode of transfer from the trolley to the operating table, also followed a routine pattern. The anaesthetist co-ordinated the move, and all parties attended to their instructions. All free staff then positioned themselves around the table ready to assist, and adopted the appropriate positions without having to be asked or directed. The anaesthetist co-ordinated the move on the count of

three. Once this was complete all those involved in the transfer assisted to secure the patient and then returned to their previous tasks.

When the surgeons had scrubbed and donned sterile gowns and gloves, they approached the patient, and circulating staff removed any blankets and coverings, in order to reveal the operative site.

The surgeon then took the antiseptic solution to be used to prepare the site from the scrub practitioner (frequently without verbal communication). There then followed a draping procedure with the connection of diathermy and suction apparatus, which also followed a routine pattern, and following a check with the anaesthetist (also routine) the surgery proceeds.

Throughout the surgery the scrub practitioner handed the surgeon the instruments required. Sometimes these requirements were anticipated, but more often the instruments were asked for by name. The circulating person kept the scrub practitioner supplied with swabs and supplementary items, and recorded these additions on the board.

At the end of the operation the dressing was applied, and the drapes removed. The transfer of the patient back onto the trolley or bed followed the same pattern seen at the beginning of the procedure.

The patient was taken out of theatre to the recovery unit, and the theatre prepared for the next case. The next patient was usually sent for during the closing stages of the previous case, usually by the anaesthetic assistant, at which point the process began again.

6.3 *Categorisation of findings*

The main findings of the ethnographic study are now presented using the main category headings derived from the data analysis. These provide the framework for the presentation of the findings.

The organisation of multiprofessional team working in the operating theatre toward the achievement of its common goal was of particular interest in the present study, not only because of the key question of identifying the nature of team work in this context by comparison with existing models, but also because the main areas of conflict, identified in phase one of this study, centred on list overrun, changes to order, and other issues connected with the management and organisation of work. Therefore in this initial section a description is presented of the data which refer to organisation, leadership and co-ordination of work in the theatre, and its consequences.

Although the multiprofessional theatre team has been presented in management literature as a close-knit group of surgeons, nurses and anaesthetists working as one towards a common goal, in practice the professions were observed only to come together for the immediate period of surgery. The preparatory work required before surgery can take place is considerable, and during the observational phase of this study this initial work was undertaken by all members of the multiprofessional team. However, only the nurses and ODPs undertook preparations within the field of observation. Medical preparations mainly took place outside the theatre.

6.3.1 *Organisation of the work of the theatre team*

Throughout the period of observation, one of the most striking features of the organisation of work, and particularly in the initial preparation of the theatre, was its routine nature. Almost exactly the same pattern and order of work was carried out in each of the observed sessions. The cleaning and checking of the theatre, the preparation of trolleys for the list, the negotiation between practitioners as to who would take each case, the donning of sterile gowns and gloves, the counting and recording of equipment used, were similar in all observed sessions. The following extracts from the observation notes, made seven months apart, show the similarity of reports in the opening comments.

Initial preparations follow the usual pattern. The theatre is prepared by two nurses and one ODP. No one is directing the work, they all seem to gravitate to tasks that need to be done without any obvious plan or order.

A similar entry continues the theme of apparently unstructured work, adding the absence of verbal communication:

[Theatre staff] begin the tasks of checking the equipment, and pushing it into position. They do not communicate with each other, or refer to any check list or protocol

The unvarying nature of this initial work of preparing the theatre environment was surprising even to the 'insider' researcher. The staff seemed not to follow any particular plan. Within the nursing/ODP group each member made a contribution to the shared objective of preparing a safe environment for surgery, although no individual had a unique role within the group. Instead, any available person was seen to turn their hand to what ever needed to be done to achieve the objective. Although the work pattern lacked any discernible structure, a great deal of what was observed was revealed at informal interview to be procedure taken from protocols, guidelines and other directives. Therefore it could be argued that a degree of uniformity of process was to be expected.

This type of activity, categorised as 'self-allocation of work' in the initial analysis, was readily observed in the preparations for the morning or afternoon operating sessions. However, it also applied to working practices observed throughout the day, when the whole multiprofessional team was present. Rarely was any individual group member observed to formally organise work, in terms of allocation of persons to specific tasks, as might be expected in industrial models of team working, nor was any evidence seen of attempts to organise the sequence or priority of the work. To the observer it appeared that the staff moved intuitively to their work. A staff nurse, offered the following observation in defence of this system:

"..we've all worked here a long time, and you get to know what needs doing, and how to do it."

Her statement carried the implication that a routine and the skills needed to accomplish the work were acquired experientially. When asked how new or inexperienced staff members coped without experience or formal guidance, she replied:

"They are never on their own, they are always with a more senior member of staff. We show them what needs to be done, they soon get used to it."

This apparent lack of formal organisation was not attributable to the lack of availability of a senior person able to take charge, or to a lack of knowledge of what needed to be achieved. In conversation with staff members of various grades, when asked what they would do if they were in charge of an operating theatre, almost identically structured responses were given, specifically: that they would organise staff, allocate work, check equipment, allocate breaks and send for patients. In these accounts, effective communication was accorded the highest priority by participants, after patient safety. Regardless of these statements, evidence of any such systematic approach was rarely observed. Indeed, discussion with theatre staff revealed the perception that formal organisation was unnecessary:

Katherine, a grade E staff nurse explained why:

"We have been working here a few years now. We don't really need anyone to tell us because we are used to it. We know what to do and just do it."

Whilst the need for formal leadership was not recognised by some participants, others considered it to belong to earlier more hierarchical methods of management which have since been superseded. An example

of this view was provided by a senior sister in a discussion of previous systems of working:

Sister: "Yes, we all get on and speak freely to one another. ...much better than the old days. No one would wish to go back to being ordered around by bossy old sisters. At least these girls are allowed to make their own decisions...we were not allowed to do anything."

Thus, during observation and informal interview, a tension could be identified. At interview there was agreement between accounts given that the person in charge of a theatre should organise the work, check equipment and send for patients. However, the same group defend their position of not needing supervision due to their knowledge and experience. The need for a person to allocate work, or "tell people what to do" was not recognised. Instead the group approach focussed on dealing with contingencies as they arose, rather than detailed planning. In this way the individual must rely on his or her own discretion in order to deal with problems as they arise, rather than turning to a supervisor for instruction as described in industrial models of team working. These responses suggest that the nurses/ODPs associate a designated person in charge, with being overseen and being 'told what to do' rather than arriving at their own decisions. In terms of team models, the staff in this sample wished to divorce themselves from work group structures which they considered dated and connected with negative views of hierarchical team supervision which undermined the preferred style of collegiality.

This is not to say that no sort of allocation of work existed in the nursing/ODP group. Even though formal allocation of work was difficult to observe, informal division of work was frequently demonstrated. The decision of who should undertake the scrub role for cases on the list was seen to be a matter of negotiation amongst the nurses and ODPs. They would decide, sometimes at the last minute, who should be assigned to

each case. These decisions were not passed on to any more senior staff, but remained between those directly involved with those roles.

At the scrub sink I asked Monica, an E grade scrub nurse, how decisions were arrived at regarding who would scrub for which cases during the list.

Monica: " We just work it out between us."

Interviewer: "So the decision of who takes which case is really up to you?"

Monica: "Yes, unless someone comes and tells us they want us to scrub for a particular case."

Interviewer: "Why might that be?"

Monica: "I don't know, sometimes they do."

Interviewer: "Does anyone organise your daily work then?....assign cases or jobs to you?"

Monica: "Sometimes, but not usually. We have been working here a few years now. We don't really need anyone to tell us because we are used to it. We just know what to do."

Once again, the recurring theme amongst the nurses and ODPs in the sample revealed that an industrial 'supervised work group' model is rejected as restrictive and redundant. Length of experience, and technical skill were considered to obviate the need for formal organisation. This system of work allocation, by peers as the need arose, was effective at least up to a point. However, on occasion, these locally arrived at decisions failed to take into account the time at which shifts ended, leaving practitioners scrubbed at the operating table at the end of her shift. On others it meant that staff on late shifts could not be re-deployed elsewhere within the department, because they were scrubbed. Therefore, although this arrangement worked at one level, specifically in that it allowed for work to be completed by the immediate team, it disregarded the needs of the larger department. It also resulted in unplanned overtime for some staff.

The following extracts illustrate some of the difficulties encountered by staff in attempting to co-ordinate their work. Alicia, an E grade staff nurse explained:

Interviewer: "Will you be doing the first case?"

Alicia: " I should think so. Janet [E grade staff nurse] is on a late shift, so she should do the last one. I hope that there will be someone to circulate for her because I need to be away by five today.

Interviewer: "Is that the end of your shift?"

Alicia: " It's supposed to be, but we always overrun on a Wednesday. I am fed up with staying back, but there's never anyone to take over."

Overrunning of theatre lists was identified as a specific cause of conflict in phase one of this study. This extract demonstrates the frustration of the staff nurse, not only at the perceived inevitability of a late finish to her shift, but also her resignation to the fact that the list would overrun. Her concern was with the provision of staff to relieve her in order not to finish her shift late, rather than focussing on the issue of managing the overrun. The root cause of the conflict therefore, remains to be addressed. The manner of local work organisation itself contributed to the conflict, as it resulted in unwanted and unplanned overtime. Although respondents appeared to welcome an autonomous approach to work allocation, the negative aspects were also identified. In addition it was observed that not only did the immediate theatre team ignore the needs of the larger department, the managers seemed not to recognise the needs of the theatre as demonstrated by the reported lack of staff rostered on a late shift sent to take over and allow people to finish their shift on time. This provides a clear example of conflict connected with the late running of lists, although this time the area of conflict is seen to exist between the nurse and the departmental management rather than between members of the professional groups.

6.3.2 *Lack of correspondence between grade and work activity*

The rejection of a hierarchical system of supervision by nurses and ODPs within the sample, suggests a dissonance with the way in which nursing is organised as a structure with various levels of seniority, and begs the question of how such a tiered system can be reconciled with a staff group all with similar skills and experience, who respond to situations as they arise. During observation and subsequent analysis a sizeable category developed under the label 'lack of correspondence between grade and work activity'. A key theme of work organisation observed within the theatre can be described as focusing on ensuring that what needs to be done at a specific time is done, as the contingency arises. During the period of preparation, and throughout the entire working session, there was no clear correspondence between the grade of staff and the work undertaken. Whereas in other models of team working, a supervisor might perceive a task requiring attention and select a worker of appropriate skill and grade to deal with it, in the present study, this was rarely seen. The observer was as likely to see a senior sister mopping the floor, as a health care assistant. Equally, the checking of the readiness of patients to come to theatre by telephoning the ward, was seen to be carried out by senior and junior nurses, operating department practitioners, or healthcare assistants. The carrying out of tasks by any nurse, ODP or healthcare assistant of any grade, was frequently observed. This seemed to be connected to the concept of 'helping out' as described in subsequent sections and which relates to conceptualisations of team working specifically described by nurses within the sample.

Alternative examples of organisation of work were sought throughout the period of observation. Although an absence of structure may be perceived in some aspects of theatre work observed, this is not to imply that no attempt was made towards leadership and co-ordination. In conversation with theatre staff, the observer was directed to a location in which a more formal approach might be seen. An appointment was subsequently made in order to attend. Initially, a more structured method of work allocation

did appear to be in progress. The following extract is taken from observation notes made at the beginning of the operating session:

On arrival in theatre, he [senior charge nurse] gathered all staff together, and organised the work of the morning. This included the allocation and overseeing of tasks.

Each member of staff was given specific work to do, and the charge nurse made periodic inspections to ensure that all was according to plan. However, this variation was short-lived. After approximately fifteen minutes, the charge nurse clarified arrangements for the list and then left the theatre. In his absence staff reverted to the more usually observed approach, of reallocating work amongst themselves, as minor changes to the plan became necessary. Evidence is presented in this study which supports the contention that even if a hierarchical organisational model is preferred, its implementation would be problematic in the context of the operating theatre, due to the need to respond to emerging problems outside the theatre, which can take any member of staff acting in a supervisory capacity out of the field.

Regardless of the number of changes to the lists observed, and regardless of the mix of staff involved, an example of structured multiprofessional team working with a single shared goal was observed several times during each list. This phenomenon was the patient transfer from the trolley on which they were anaesthetised to the operating table, and back. This event followed the same pattern in every observed case, and in some respects corresponds to the general routinisation of work. However, it is conspicuous in that it is a multidisciplinary activity, co-ordinated by an identified leader. The leader was always the anaesthetist, and participants in this activity were drawn from any professional group, depending on availability. Once again, staff allocated themselves to the transfer team rather than being directed, but once there they followed the direction of the anaesthetist. Once the transfer was complete the staff involved revert to other tasks.

6.3.3 *Leadership and role modelling*

In addition to examples of co-ordination, leadership in terms of providing role modelling for good practice, was also observed. This facet of leadership appeared to have an effect on all professional representatives directly involved in the surgical procedure. However, in the observed cases, the change was not maintained for the following operations when the role model was no longer present, as illustrated in the following extract from the observation notes:

The staff nurse [Sarah] deals with a breach of accepted etiquette, [all items must be passed from the trolley by the nurse or ODP]. Sarah stops the surgeon from taking items directly from her trolley.

Sarah: " Just a moment please, I'll give those to you if you don't mind. Then it's my fault if something gets knocked off the trolley."

The surgeon stands back, and from that point all those involved in the surgery adopt correct procedure. This formal approach extends to the finish of the operation.

The above extract demonstrates the positive effects that role-modelling can achieve. However in the case which followed on immediately afterwards, in which all personnel were the same apart from the scrub nurse, standards were seen to revert.

The surgeon prepared the operation site with antiseptic paint, which she took from the scrub nurse without interrupting her conversation with the anaesthetist.....she then took the drape off the trolley without acknowledging the scrub nurse.

6.3.4 *Moving the list forward*

The preparatory work carried out by nurses and ODPs as an initial step towards meeting the shared objectives of the whole team has already been described. Actions of the whole team directed at meeting their common goal was summarised in the original analysis under the heading of 'moving the list forward', a group of activities directed at progressing the

patient through the surgical episode quickly and safely within an imposed time constraint. During observation it was noted that, as in the case of the nurses and ODPs in their initial work, no apparent leader could be identified in the multiprofessional group. Instead, a sequence of events were initiated by a variety of individuals representing their professions within the team. Although the group had a shared objective, the routes to that objective, in terms of priority, could diverge according to profession. These differences were not openly discussed between the professions in order to find a commonly acceptable compromise, and as a result episodes of frustration became evident.

Although participants of all professional groups were seen to initiate strategies for advancing the list, it was generally considered to be the job of the anaesthetist. In conversation with an E grade staff nurse, Lynne, employed in a scrub role, the following observation was made:

Lynne: " The anaesthetist really drives the process, they are motivated by the desire to finish on time. They decide to send, and achieve this through the anaesthetic assistant they work with."

Arrival at this conclusion could readily be appreciated as the anaesthetists were the most vocal in their attempts to maintain the list within its appointed time limits. Some extreme examples were observed. However even within the most astonishing of these, it was clear that the patient's safety and best interests remained the primary concern, and that a certain amount of dry humour attached to the proceedings, as the following extract from the observation notes demonstrates:

The senior anaesthetist, who had left a junior colleague in charge of the patient, returned to the theatre and was struck by the lack of progress:

Consultant anaesthetist: [Firmly but without emotion] "You said you were going to be 15 minutes. That was half an hour ago, it is now half past four. You have had your time, I am now waking the patient up."

Surgeon: " We are just closing."

Consultant Anaesthetist: " You had better close quickly then, because I am switching the gas off now."

With that she went to the anaesthetic machine and made adjustments.

Cons Anaes: Lets get the bed in please.

She received a somewhat shocked look from the surgeons

*Cons Anaes: " Don't look at me, you know what time you are supposed to finish. If we miss the slot in recovery I shall be mightily p****d off!"*

The dressing was applied as the bed came in.

This extract demonstrates conflict between surgeon and anaesthetist in overrunning of the list based on an apparent lack of consideration of the needs of others. It also shows that routes to the common team goal, in terms of priority, were not shared. The surgeon was slow because the case was being used to teach a junior colleague. The anaesthetist's priority was to ensure the patient did not lose their place in the queue for recovery. This was the most extreme example observed. However, in conversation with the anaesthetist, she expressed the opinion that the surgeons could be inconsiderate, and did not seem to realise that people have other calls on their time. She pointed out that she would not, of course, wake the patient up in mid operation, but she felt that not enough of a stand was made about surgeons adhering to the allocated times. No dialogue was initiated by either party with a view to addressing this conflict even though the need to do so was acknowledged.

It was unusual to find the theatre staff actively trying to progress the list, although they generally shared with the anaesthetists the wish to finish at or before the allotted time. On certain occasions the surgeon would instruct the anaesthetist to send for the next patient. However if the anaesthetist considered it to be too soon, they would acknowledge the instruction, but take no action. The explanation given for this approach was that they wished to avoid having the next patient waiting in the anaesthetic room for an undue length of time. This argument was not

presented to the surgeons. Even at the beginning of the list, sending for patients was seen to be problematic. The key barrier to starting the list at the advertised time, was observed to be the need to wait for the surgeons to arrive in theatre before the patient could be sent for. This was the case in every observed session except one, in which the anaesthetist decided to send for the first patient on the list regardless of the surgeons, although she did not proceed to anaesthetise the patient until the surgeons were present. In discussion with a senior sister a short time after the event, she questioned the wisdom of sending for the patient, even though the anaesthetist had not proceeded to anaesthetise the patient:

Interviewer: "Do you feel that it was inappropriate to send for the patient according to the agreed operating list, at the specified time?"

Sister: "...she [the anaesthetist] has been here long enough to know that that [the operating list] is nothing to go by. What if they had wanted to change the order of the list? That patient is sitting in there hooked up to all sorts of monitoring, and could end up being unhooked and sent back to the ward. Imagine what that feels like...and how it makes us look!"

It was quite clear from the findings of this phase of the study, that the operating list, although signed and agreed, by both surgeons, and theatre staff, when submitted the day before, was not regarded as a reliable source of information by nurses, ODPs or anaesthetists. No real organisation seemed to be possible until the surgeon appeared, immediately prior to the commencement of the list, representing the only credible source of information. This situation represents a potential cycle of conflict due to the poor quality of information. The staff resist sending for the patient in case this may cause conflict due to sending for the wrong patient. Instead they wait for the surgeon, at the risk of a late start to the list, which in itself represents both a source of conflict, and an illustration of professional separatism between the members of a highly interdependent group.

6.3.5 *Difficulties of leadership and co-ordination due to the potential for change*

The potential for change to the expected order of work, often at short notice, was seen during the study to be a particular feature of the work of the operating theatre, and represented a particular challenge to work organisation and team leadership in relation to achieving the common team goal in this context. Although leadership and co-ordination can be considered as quite separate activities, they were grouped under this heading for the purposes of analysis, as common aims and barriers can be argued to apply to both. Leadership and co-ordination in this context share, as part of their function, the aim of efficient progression of the operating list, through exemplification of best methods and practice, and arrangement of optimum use of resources respectively. Both activities were seen to be problematic due to the potential for change during the operating list.

Change to the original list order was seen to originate from both inside and outside the operating theatre. The following extracts provide typical examples of each case:

The anaesthetist asks the consultant whether the next patient is going to be operated on or not. The consultant replies that it depends whether they have found a bed for the patient or not. After a pause the anaesthetist reopens the subject, and asks whether the consultant will do the last patient on the list instead if no bed can be found. The consultant replies by saying that someone needs to find out what's going on, but if there is no bed then they will do the last case next, whilst waiting. None of this is mentioned to the scrub nurse who is preparing her equipment according to the original list order.

The consultant surgeon tells the anaesthetist that he has an appointment after lunch and so will need to re order the list so that the remaining cases can be undertaken by the registrar. The anaesthetist is concerned that this may slow the list down, as he must also leave by

4:40. They agree the changes between them, and then tell the sister. The sister is not pleased about the short notice as she will have to reorganise plans in order to have the appropriate nurses available for the cases at different times.

The first of these examples highlights the important consideration, that the operating theatre is subject to external influences over which the staff may have no control. It also demonstrates the lack of communication between professional groups, which can be argued to be the key to achieving shared goals. These extracts indicate firstly the additional obstacle related to the theme of short-notice changes in the form of incomplete communication across the multiprofessional team. The second extract shows one of the problems which arise from short-notice change in terms of skill mix. Although it was highlighted in earlier sections that no individual among the nurses and ODPs was seen to have a specific role in the general preparation of the theatre, this was not seen to be the case when considering who could scrub for specific operations. Here, the experience of the individual was the deciding factor, and the degree of interchangeability within the nursing/ODP group was greatly reduced.

6.3.6 Barriers to effective organisation of the work of the operating theatre team

The leadership and co-ordination, observed in this study, appear in many cases to be dependent for 'validation' by the surgeon. Examples presented include making early arrangements for sending for the patient, and the allocation of staff to cases. The list order and starting time can rely on the surgeon's agreement, and the time of their appearance in the theatre. Therefore any arrangement is subject to change at short notice. Delay to the arrival of the surgeon was observed to cause anxiety to theatre staff, as they face the dilemma of delaying the start of the list, thereby decreasing the amount of time available to the surgeon to operate, or risk sending for the wrong patient. In either case the potential for conflict between the professional groups can be recognised. The following extract is taken

from observation notes taken at the beginning of a full general surgery list:

Senior staff nurse: "Shall we send, or shall we wait?"

ODP: " We usually send....I mean we don't usually wait for anyone".

Senior staff nurse: "Shall I send then or not?"

Senior staff nurse phones the holding bay to see if they have sent for the patient. They have not.

Senior staff nurse: "They haven't sent, shall I phone the ward and send anyway?" [this is ignored by all, or at least no one responds].

Senior staff nurse does not repeat herself or press for a response.

She goes directly to the ODP [her junior] and asks: "Shall we send for the first patient? I can phone the ward and ask if he is ready".

The ODP agrees with this course of action.

Co-ordination and leadership, particularly where they involve forward planning, were observed to be somewhat hampered by the ability of the surgeon to make alterations to planned or agreed list time and or content. Although it could be argued that it might be quite appropriate for the surgeon to make changes to the list, the findings presented here indicate the lack of timely communication. The surgeon was not present, and thus needed information was not obtained. This impacts on the team's ability to anticipate. They may also be seen to disrupt routinised work elements. Whilst even with the self-allocating system espoused by nursing and ODP staff there are elements of imposed leading and co-ordinating, and this can include the anaesthetist and assistant. However, no attempt to actively manage the surgeon's activities was ever observed. This may be considered unusual in a team working system where the broad objective is to achieve a set volume of work within an inflexible time frame, and where the outcome is of interest to the wider organisation.

6.3.7 *The role of anticipation in goal achievement in the operating theatre*

The potential for change to planned work at short notice, described in earlier sections, meant that anticipation was a major aspect of the work of

theatre staff. Although the scrub nurse or ODP's role of anticipating the needs of the surgeon at the operating table represents a familiar image from popular culture, anticipation of needs on a wider scale is a key aspect of team working if delay within the imposed time limits of the list is to be avoided. This was seen to include the gathering of additional equipment as a contingency in case of unplanned events.

In order to anticipate effectively, theatre staff stated that they rely partially on experience, but also on the availability of information. In some cases the quality of this information was poor. In an informal interview with an E grade staff nurse, the interviewer attempted to discover the means by which nurses and ODPs managed to anticipate the needs of the surgeon for specific cases:

Interviewer: I notice that you have a sheet of notes for each of the surgeon's requirements for each of their cases. Is that useful?

Staff nurse: "It is if it is kept up to date, and if you can find it in the first place. People borrow it or take sheets out to photocopy and then don't return them. The other thing that happens is that the surgeons change their preferences and no one bothers to update the sheets.

Interviewer: "Do you ever show these to the surgeon and ask if there are any alterations?"

Staff nurse: "No, what happens is, the circulating nurse takes note of what happens the first time a case is done and then writes up the sheet from that.....even if you've got everything out on the list you can still end up with things missing. They change their minds or decide to alter the procedure and then it's a case of keeping your wits about you".

This conversation drew attention to a second document which, in common with the operating list described earlier, could not be completely

relied upon due to the possibility of the surgeon changing his or her mind, and the possibility that it might not have been updated. This extract provided an acknowledgement on the part of the nurse that the quality of the information was poor and unreliable, and that despite assurances from surgeons presented in section 6.3.13 that their requirements never vary, the information was of limited value in the face of change. In addition this account highlights an almost clandestine manner of collecting the information. The surgeons were not directly questioned at the time, nor were they invited to check the information obtained. This might be considered surprising in view of its impact on delay and the potential for resultant conflict.

Delays due to untoward or unanticipated circumstances were frequently observed, and a good deal of time was spent by theatre staff attempting to rectify these situations. Generally this entailed dealing with equipment which had malfunctioned during surgery, or supplying equipment, the need for which had not been anticipated.

6.3.8 *Avoidance and hiding*

Preparations for surgery based on poor quality information may be expected to have adverse consequences and this was certainly born out in observation. It could be considered that the standard of information might be readily improved by opening dialogue between the professional groups and particularly between surgeons and nurses. However, during the study it was seen that staff, particularly non-medical staff, took steps to avoid displaying any lack of knowledge. This activity was grouped in the category labelled 'avoiding/hiding' in the initial analysis of the data, and was characterised by avoidance of situations or conversations that were likely to expose lack of skill or knowledge. Examples of this included scrubbing up early in order not to be able to participate in the setting up of equipment or difficult positioning of the patient. Other examples included leaving the theatre under some pretext when there was a technical malfunction, or allocating a named person to deal with it.

The following extract describes an event in which the most senior nurse in the theatre left the most junior to deal with the setting up of a pneumatic tourniquet. This piece of equipment consists of a cuff placed around a limb. When the cuff is secured and then inflated with gas, the pressure prevents the flow of blood to the portion of the limb below the level of the cuff. This enables surgery to be performed in a bloodless field. Many technical and safety considerations must be attended to in the use of this equipment. Incorrect application can have serious consequences during surgery, or may cause injury to the patient.

The surgeon requests an antibiotic to be given to the patient before the tourniquet is applied. Preparation of the antibiotic is the role of the anaesthetic assistant. In this case the sister leaves the theatre to prepare it in the anaesthetic room and tells the junior nurse to set up the tourniquet.

The nurse wheels the tourniquet up to the operating table, looks at it, and leaves it. Senior nursing staff in the lay up room, see the junior nurse's confusion, but ignore it.

The junior nurse approaches one of the surgeons and tells him that she needs him to apply the tourniquet. The surgeon says that he will need to scrub soon and cannot help her. He goes to the tourniquet and looks at it, then walks over to the nurses in the lay up area. He asks them to get someone to fix it. They say they will, but take no action. Eventually the sister returns with the antibiotic. Seeing that no one has applied the tourniquet she seeks the anaesthetic assistant and tells him to apply it. He does so immediately. Everyone walks away and leaves him to do it. No one watches.

A lack of willingness to engage in open dialogue is amply demonstrated here. Members of the multiprofessional team passed the task on to their colleagues either excusing themselves from the role or through inaction. The result was delay to the list, and although the situation was likely to be

encountered in the future, team members distanced themselves from the person who demonstrated a skill that might be of subsequent use. A general reluctance to be open about lack of knowledge was seen. This extended beyond technical issues to the nature of the surgery to be undertaken. Deflection of questions, particularly those relating to the nature or requirements of the surgery to be undertaken, was also observed and subsequently categorised under the avoidance/hiding category. In conversation with a scrub nurse who was preparing for an orthopaedic list, the observer asked the nurse whether he could describe the procedure that was to be first on the list. The conversation proceeded as follows:

Observer: "Can you tell me a little about what they [the surgeons] will be doing?"

Staff Nurse: "I think it will be to fix the wrist." [He points to the name of the procedure on the list.] "This indicates that there is a problem with the wrist."

Observer: "How will it be fixed? Do you know in advance?"

Staff Nurse: "We have to wait and see what the consultant says when she arrives."

The registrar enters the theatre. The staff nurse introduces the observer as 'someone who has come to observe' and would be interested to know about the procedure. With that the staff nurse leaves. The registrar explains the entire process in lay terms. At the end the registrar says that he is happy to explain the procedures to anyone who is interested.

The willingness of the surgeon to explain the procedure to the observer suggests that the information could have been made available to anyone who expressed an interest. The staff nurse did not seek any clarification directly from the surgeon.

Although the sister, whose comments were expressed in section 6.3.1 welcomed the freedom of nurses to make decisions, which not been encouraged in prior times, examples were difficult to observe. Nurses

tended to demonstrate a lack of comfort in making and acting on decisions. Instead they tended to either avoid or spread the decision making burden amongst colleagues, as illustrated in the following excerpt:

One of the staff nurses was observed receiving a call from the ward telling her that the first patient on the list has been sent for a CT scan. The staff nurse was uncertain about sending for the second patient in the meantime to avoid delay. Unable to find the sister in charge, she tells two other junior nurses and later a student nurse. When she finally encounters the sister, the sister hands the problem over to the theatre manager, stating that " she can sort this one out".

On other occasions, when a technical malfunction, occurred behaviour categorised in the original analysis as 'moral support' was observed. Unlike the example above, in which staff demonstrated avoidance, this activity was characterised by grouping round the person trying to remedy the situation and offering encouragement, but no concrete information or advice which could help.

In this illustrative extract from the observation notes, a piece of equipment which is vital to the surgery fails to function:

Initially the sister and the health care assistant gather round the machine and press buttons. Little by little more people join in with suggestions. Without reference to anyone the health care assistant goes to get assistance from another theatre. The nurse from the other theatre has no more luck than those already assembled. Soon the registrar joins in. Eventually someone presses a button and the machine responds and functions normally. The nurse from the other theatre announces to everyone which button to press should there be a future malfunction.

In this example, as in the previous one, a lack of knowledge was demonstrated. However, instead of avoiding the issue, all available

persons joined in and made whatever contribution they could in a supportive manner. It could be argued that the concept of support should be a fundamental component of the role of nurses and ODPs whose job it is, particularly within the circulating role, to attend to the requirements of their colleagues in the scrub role. However, during the period of observation, it was seen that the scope of support offered to colleagues within the nursing and ODP group extended beyond that necessary to perform within the role. As well as fulfilling the needs of colleagues through the anticipation of their requirements for items of equipment, or for checking and counting of items, activity categorised as 'moral support' was also observed.

The concept of 'moral support', as described by staff members in conversation with the interviewer, was observed most frequently in instances where there was technical malfunction. Typically staff members gathered around the person who was trying to correct the fault. Even where staff members were unable to offer practical assistance they were seen to offer encouragement and to suggest strategies, or on occasion fetch assistance. Further examples include the gathering of scrub staff round the trolley of a scrub practitioner who was struggling to keep up with a demanding or challenging surgeon, or an emergency. In this case their assistance tended to be more practical. This seemed to tie in with the idea of relying on each other at times of need, and group support within the professional group. An example of this behaviour is presented in the following extract from the observation notes. In this case a junior nurse had volunteered to scrub for a case. However at the last minute a decision was made by the professor of surgery that he would undertake the surgery himself. The junior nurse became nervous, and was uncertain as to whether she would be able to meet what she imagined to be more exacting requirements. The following extract demonstrates the nature of support offered to the scrub nurse by her colleagues:

The senior grade sister and the staff nurses gather in the laying up room to tell the junior nurse this news. They ask her if she will still do

the case and, whether she wants someone to double scrub with her. She says that she thinks that she will be alright, but now insists that a senior member of staff stays with her at all times. The G grade sister reassures her that she will not be left on her own.

6.3.9 Perceived lack of power to make changes

Regardless of the number of times that staff reported that they had all been doing their jobs for many years and thus required no leadership or supervision, and also the insistence of the surgeons that staff in "their" theatres knew all their requirements (which were unchanging week after week), there were numerous occasions when there was missing equipment. This equipment was either forgotten, in use in another location, hard to find, or some vital "consumable" component had not been ordered. In these cases, the lack of equipment and related delay were not attributed to the absence of co-ordination or planning. Instead staff frequently stated that the lack of such items was a result of the actions or oversight of a third party, and that they were not in a position to do anything about it. In this extract from the observation notes, the surgeon asked the theatre staff where a particular piece of equipment was:

No one seemed to know. The surgeon said that he required the equipment for every case, and that people should know that by now. The nurse in charge of the theatre later disclosed her annoyance that no one had told her about the equipment in question. She accused her colleagues on not passing on relevant information, and consequently making her look foolish in front of her colleagues.

A related issue is that of blame apportionment. This was seen in cases where others had not put equipment away in the right place, or had lost components, or had left the theatre without necessary stock, or not ordered required items. This was often accompanied by the assertion on the part of the complainant that they would never do such a thing themselves. In this final illustration two nurses, Grace and Leanne, complain about the

condition in which they found the theatre to which they have been allocated:

Grace: "Who was in here last?"

Leanne: "I know, it's been left in a right state, they haven't even bothered to take the attachments off the table. They probably didn't bother cleaning either in that case....disgusting."

Grace: "There was a table cover full of dried blood in the bin when I just emptied it. They even left that there! Its disgraceful. They just disappear and couldn't care less. Now we have all their work to do as well as our own before we even start."

At this point the sister entered the theatre, and all conversation on the subject ceased. No one brought the perceived problem to her attention.

6.3.10 *Formal and informal checking*

The preparatory checking of the theatre, prior to surgery, by the nursing and ODP staff has been described in section 6.3.1 in relation to the organisation of work. Surgeons and anaesthetists relied on the nurses and ODPs to ensure that equipment required for surgery was available and functioning correctly. No discernible guidelines or protocols were followed during this work. Instead, staff appeared to prepare equipment to their own satisfaction. This appeared to be in marked contrast with other forms of checking carried out by the same staff. Examples were observed, of the highly formalised checking procedures which apply to drug administration and patient identification. Particular features of these more formal processes were; that checking was carried out by two persons, and that records of the check were maintained.

Initially there seemed to be a sharp contrast between these approaches. However, during analysis of the data, a similarity was noted. Although double checking invariably occurred in the more formal process, it was also observed in the informal process. The difference lay in the 'consciousness' of the second checker. Due to the manner in which staff gravitated to work which they perceived to require their attention, late-

comers frequently repeated activities which had already been undertaken by other staff. This included the checking of equipment. Even when the first checker was aware of this repetition, they were not observed to prevent the duplication. Duplication of cleaning work, was almost invariably prevented.

An explanation was offered by one of the staff nurses, as to why a more formal checking process was not applied to all forms of checking:

"Well you just have to trust your colleagues don't you? We are all a team here, we work together and help each other....you know. That's what it's all about isn't it? Trust?"

These findings indicate the informality of a process which could directly affect the progress of the list and provided a considerable potential for conflict. Notwithstanding the trust placed in what might be described as 'unconscious' double checking as previously described, failure of equipment was frequently observed. Although the principal consideration in testing equipment in the operating theatre, could be argued to be the safety of the patient, its failure appeared, during observation, to more usually result in delay to the list, which was seen to be a source of frustration to all staff. However the nurses and ODPs were considered accountable, as the routine checking of the majority of the equipment did not appear to be a responsibility shared with other professional groups. Exceptions to this were observed, and included the checking of equipment by surgeons immediately prior to use, and the checking of the anaesthetic machine and other equipment by anaesthetists in compliance with their professional protocols.

6.3.11 *Dealing with conflict*

During analysis of the data, a group of activities were identified under the heading 'maintaining the environment'. These included the maintenance of the physical environment but also the 'management of atmosphere' within the theatre. This latter activity threw light on strategies employed

by members of the theatre team to suppress or avoid conflict, and thereby reduce its negative impact on the working environment.

This category of activity was most frequently seen in the case of the difficult surgeon who was prevented from making life even more difficult by the nurse who goes out of his or her way to keep the surgeon cheerful. A number of strategies were observed. These ranged from flattery to making any potential outburst seem so ridiculous that its effect would be lost. An illustrative example of this approach was provided by Eric, a senior charge nurse. At the beginning of the list the first case was delayed due to the unavailability of a translator for the patient. Eric had attempted to identify other patients who could have their surgery whilst awaiting the arrival of the translator, but on each occasion had been told that no other patients had been allocated beds. The surgeon complained directly to Eric that the list was being most inefficiently run. In response Eric pointed out that the fault lay with the bed managers rather than the theatre staff. The surgeon remained unimpressed and left the theatre to wait in the coffee room, taking his colleagues with him. In due course the surgeon returned to the theatre, having been summoned by the anaesthetist. The charge nurse then called for the attention of everyone and made the following announcement:

Eric: "Now, Mr. Smith is in a good mood today, so nobody is allowed to upset him!"

This was greeted with general laughter. Mr Smith retired to the scrub sink without responding. The role of the nurse in keeping the surgeon happy is well described in the literature and although it can dispel aggressive outbursts at the time they occur, it fails to address issues of conflict by simply glossing over them. Lack of open communication between the professional groups in this study has been demonstrated, and this approach which focuses on suppressing aggression, fails once again to open dialogue between professional groups as a means of dealing with its causes. This approach was nevertheless, successful in the short term,

and was observed on other occasions. It was also observed to occur with the roles reversed. In the following example taken from the observation notes, the surgeon applied a similar tactic to the theatre staff nurse.

The consultant surgeon announced a last minute change to the list order, explaining that he needs to be elsewhere by mid afternoon. The staff nurse in charge expressed her displeasure. The consultant put his arm around her before she could comment further, and, in a loud voice, made flattering observations about her ability to cope with such things. She seemed too embarrassed to respond.

Again this "jolly along" approach represented a means of preemptively dealing with potential conflict. However in this case a subtle difference can be observed. Whilst the nurse-surgeon episode aimed to avoid expressions of aggression, in the latter example the aim was to firmly close dialogue before an argument about a specific instance could be initiated.

6.3.12 *The role of communication*

Effective communication appears in the literature as an essential component of team working, and in the present study it was cited by respondents as being of central importance to their work. It was asserted on several occasions, that communication was a vital part of the successful team working in theatres. The surgeons considered that it was part of what they described as team work, and that their communication with other staff members was key to the success of their operating sessions:

Consultant Surgeon: "We are very good at communicating here in theatres as you can see. It is vital that communications are good.

The nursing and operating department practitioner staff, considered that it was an aspect of theatre work which had improved over the years, and

was now much easier and more effective than it had been in the past. A senior sister gave this opinion:

Sister: "Yes, we all get on and speak freely to one another. There is no hierarchy now.. "

However, regardless of these assertions, it was noted in the observed sessions, that there was a lack of communication between the professional groups. The theatre staff were reluctant to ask the surgeons for specific information about cases on the list, even though the surgeon might be standing only a few feet away. In the following example, two scrub nurses, Ann and Sarah, are uncertain whether to open a supplementary instrument pack as they prepare for the procedure. There are implications of cost and delay to the list depending on their decision. The surgeons are standing in a group near by:

Ann shows Sarah a pack and asks if she wants it to be opened:

Sarah: " No, don't bother"

Ann: "It was needed last time this procedure was done"

Sarah: "Well don't open it, just put it under the trolley . I'll ask for it if it turns out that we need it."

Ann: "I think you will need it.."

The surgeons, who entered the theatre during this exchange, are standing in the scrub area chatting about social subjects. No one approaches them to ask whether the item is likely to be required for the case.

The surgeons rarely approached the theatre staff to give them specific information, or to ask if equipment was available. On the rare occasions when communication did take place between the surgeons and nurses or ODPs at the start of the list, it was generally social conversation, which was rarely steered onto the subject of work by either party:

The registrar comes in. He is cheerful, and goes over to chat to the scrub nurse and circulating ODP about the forthcoming Easter break. He asks whether they will be working or going away. They discuss a colleague who is going skiing. No one asks about the procedure.

This could be considered a missed opportunity, as a short time later a conversation between the observer and the registrar concerning a particular type of suture which was going to be used for the case, was overheard by the theatre staff. This caused a considerable reaction, as the required suture was not immediately available, and would have to be borrowed from another site. When the consultant surgeon became involved in the proceedings, a catalogue of poor communication unfolded:

The consultant addressed the sister and staff nurses:

Consultant: "Look, we need these sutures. What are you going to do about it?"

Sister: "What can I do? There are none in the hospital."

Consultant: "Well, I will phone the [private hospital] and ask them to send us some over, and we will replace them. Order a taxi and I will organise it." [she leaves the theatre to find her mobile phone. On her return she is addressed by the sister.]

Sister: "I can't order a taxi without the transport budget code."

Consultant: "You will have to get it then because the patient is already asleep!"

Sister leaves to sort out the taxi. The consultant telephones the private hospital and arranges the loan.

Shortly afterwards the sister re-enters the theatre with three boxes of the required sutures.

Sister: "I've found some."

Consultant: "I have just made all the arrangements to borrow them! Now I suppose I have to phone them back!"

Sister now confronts the consultant:

Sister: "Well you should have waited. I asked if there were any [sutures] in the department and everybody said there weren't . What am I supposed to do if no one tells me the truth?"

Sister puts the sutures down and walks out of the theatre.

This extract demonstrates the way in which aggressive behaviour can erupt as a consequence of conflict, in this case the potential delay to the list caused by the procurement of necessary equipment. It could be considered that this need should have been anticipated. However even when both parties discovered that it had not, no one was seen to take the lead in trying to find an acceptable way to address the problem. Instead the surgeon simply decided to adopt one possible solution without further explanation. This example clearly detracted from the credibility of the previous two statements. Good communication, claimed as the cornerstone of team work in theatre was not seen, before or during this event. However, it was noted at the time, that those involved were working against the clock in order to correct the situation, which must further impeded calm deliberation.

The reluctance of nursing and ODP staff to approach the surgeons for information was seen to be matched by the behaviour of the surgeons, who were observed to wander round the theatre looking for items, such as the operating list, and retreat once more to their group without finding it, even though the theatre staff were there to be asked.

Equally there were cases where the anaesthetist was unaware of the surgeon's plan to extend the list, or on one occasion that a case requiring special anaesthetic consideration was on the list:

Consultant Anaesthetist: "This case they're doing this afternoon; are they intending to do a tracheotomy, and is it an extended list? Because no one has discussed it with me."

Surgical Registrar: "I don't think it will be much."

Consultant Anaesthetist: "Well I spoke to this woman [patient] this morning, and she seemed to be under the impression that she was having quite a lot done. Her initial surgery lasted fourteen hours, and I would like to know what's planned this time."

Surgical Registrar: "I don't know what he [consultant surgeon] has planned. It probably won't be much."

The consultant anaesthetist, in a later discussion with the observer, highlighted the frustration that could result from communication that was perceived to be inadequate:

"The thing is, it is all assumed that I will be here until such times as the list is finished. No one ever bothers to ask whether an overrun would be a problem, or to allow me to make arrangements. It's whatever suits the surgeons as usual."

The anaesthetist, in common with the scrub nurse in earlier extracts, highlighted the inevitability of the situation. The conflict centred on a perceived lack of consideration for colleagues. Again the main issue was not debated in order to reach a compromise.

The scrub staff complained that they were never informed by the anaesthetic staff when the patient had been sent for. An ODP employed in both scrub and anaesthetic assistant roles, gave the following account, regarding the process of sending for patients:

ODP: "The last to hear are the scrub team. They are the bottom of the pile when it comes to communications..they are powerless to argue anyway."

This lack of communication had an impact on team performance as it further hindered anticipation on the part of the scrub nurse, and demonstrated a lack of appreciation of the role of the scrub staff by colleagues from other professional groups.

In addition to the simple passing on of information, there were other communication issues to be considered. Some of the more senior surgeons completely ignored members of the scrub staff. On one occasion the surgeon simply walked away from the staff member when she was addressing him. Apart from the discouraging effect this may have on further communication, it also serves to underline the separation of the component groups of the theatre team.

Indeed, when the scrub practitioner presented the surgeon with the antiseptic paint at the beginning of the case, it was frequently observed that the surgeon would not even acknowledge the scrub practitioner, usually continuing the conversation he or she was having with a third party. Nor was this approach limited to the nursing staff, as illustrated by this extract from the observation notes:

The operating surgeon stands holding the towel and continues the conversation he is having with his colleague. The anaesthetist disconnects the tubing and lifts the patient's head. The surgeons slide the drape into position and the anaesthetist reconnects the anaesthetic circuit. No verbal communication passed between the surgeon the scrub nurse or the anaesthetist during this part of the procedure.

In a more extreme example a surgeon picked up a newspaper and presented a physical barrier to the nurse who was speaking to him. This was more obvious form of ignoring than was usually observed. The following extract from the observation notes provides a further example:

Often when spoken to by staff in the theatre, and addressed by name, the consultant does not acknowledge them or even look at them. On two occasions, he simply moves away, leaving his registrar to answer the question.

Far from encouraging communication between the dependent professional groups this distancing behaviour identified as 'purposeful ignoring' (a sign of aggressive behaviour in phase one of this study) actively discouraged communication.

A further behaviour, related to communication, was the phenomenon of the "generally addressed comment". This was most commonly made by the surgeons, and took the form of a general observation made to the theatre at large rather than to an individual who might be considered accountable, or able to alter the situation. Examples of such comments include this one made for the benefit of the theatre staff, but directed to the anaesthetist:

Consultant surgeon: "You know we do this every week, it's always the same, but no one ever has the equipment."

This phenomenon, the generally addressed comment, was frequently seen during observation. Its key feature, it could be argued, relates to conflict management. An area of conflict had been identified by the speaker, and yet no attempt was made to open a dialogue with a view to finding a solution and prevent continuation. Instead this might be classed simply as an expression of frustration. The second example although couched in the nature of a rebuke, demonstrated a further instance of closed dialogue and a perpetuation of existing conflict.

In a similar example given below, a consultant surgeon addressed this comment to the theatre in general, rather than to any specific person:

Consultant surgeon: "Look, this is wasting a lot of time, This is equipment I use routinely and we shouldn't be looking for it at this stage of the proceedings."

6.3.13 *Perceived lack of need for communication*

Given the importance of communication as a concept of team working, and the particular recognition of its role in theatres by participants in this study, the following extracts were unexpected. A group of participants revealed at interview that they considered the routine nature of the work of the theatre to obviate the need for communication. This extract gives the view of a senior surgeon, who acknowledges the importance of communication, whilst at the same time questioning its need:

Consultant surgeon: "It is vital that communications are good [in theatre].

Interviewer: "You mean you speak to the nurses and anaesthetists about your cases when you come to theatre?"

Consultant surgeon: "Actually there is no need. They have a 'cardex' [filing system] here. They know my requirements, I never vary, These nurses all know me.....I don't speak to the anaesthetists either they all know my likes and dislikes."

Having made these broad assertions, the consultant surgeon proved them to be unfounded by proceeding to the scrub nurse's trolley and pointing out to her that some incorrect items of equipment on her trolley. The scrub nurse disputed this and gave the surgeon the item to examine more closely. At the conclusion of this exchange neither party could be entirely sure that the item was of the type usually supplied. No further dialogue was opened regarding a means of clarifying the issue for future occasions, even though the most appropriate parties were present.

6.3.14 *Perception of team status*

A key concept in establishing team status was that of the membership recognising itself as such. However, one of the most marked and frequently observed behaviours during the study, was the tendency for the professional groups to remain intact and separate from others. This was most particularly noted in the surgeon's professional group.

The surgeons were generally observed to enter theatre in a group and remain in that group throughout the operating session. This separation was further exemplified in the comments of the nurses/ODPs. A clear perception was seen in the data that surgeons in particular were not only separated from nursing by profession, but also by the perceived lack of equality in the application of rules and protocols. Challenging surgeons on matters of policy (particularly wearing correct theatre clothing, use of mobile phones in theatre, and bringing personal items such as bags into theatre), was avoided because, as this staff nurse comments, it was considered a waste of time to try:

When the staff nurse was asked whether anyone had confronted the surgeons about their non-adherence to policy ,she responded:

"Forget it. They do what they like".

This attitude is exemplified in a further extract , in which a consultant surgeon conducts a loud conversation on his mobile phone in the middle of the theatre. The subject of the call concerned the purchase of a property abroad. The staff appeared to be pretending that nothing was happening. However an ODP approached the observer at the end of the incident and made the following observation:

ODP: "If that had been one of us, we would have been disciplined. There is definitely one set of rules for us, and one for them."

Verbal exchanges with members of the other professional groups were generally brief. Observed conversations between the nurses and surgeons were, as noted in earlier sections, mainly social rather than pertaining to the list. The lack of integration can be seen in these extracts, the first describes the actions of a group of surgeons at the conclusion of the first operation on the list:

At the end, [of the case] the surgeons get up, remove their gowns and gloves, and retire to the coffee room. [they have brought donuts, but only for the medical staff - not including the anaesthetist].

The consultant and two assistants appear in theatre. They arrive with rucksacks and brief cases, which they put in the corner of the theatre. Their conversation continues within their group. They can be overheard asking each other how far things have got, and whether the patient has been sent for. They look at the list on the theatre wall, but at no time do they approach the nursing staff to ask what progress has been made.

Observations of the behaviour of the professional groups led the observer to attempt to identify the views of the participants on whether they perceived the staff of the operating theatre to be one or more groups. Some variation was seen in responses to this enquiry. Some of the nursing staff considered there to be one multidisciplinary group:

Interviewer: "You describe the theatre personnel as a multidisciplinary team?"

Sister: "Yes, even the radiographer is included."

Interviewer: "So how does everyone work together to get things done?"

Sister: "Well, we get all the equipment ready, and then one of us will scrub and one circulates, and one helps the other in that way..."

Interviewer: "That sounds like what the nurses do..."

Sister: "Yes that's the nurses job."

Interviewer: "But what about the doctors and radiographers?"

Sister: "Well they help too. You know...to transfer the patient. If it's a big patient it can take three people at each side to shift them you know... it's an all hands on deck situation...."

This comment returned once more to the concept of participation of all parties to achieve whatever was necessary to complete the main goal as a

definition of team work. Inclusion within the team appears to be dependent on ability to help. This idea was further borne out by the comments of a healthcare assistant (HCA):

Interviewer: " So, who would you include in the team you describe?"

HCA: "Everybody"

Interviewer: "So not just nurses?"

HCA: " No, nurses, ODPs, everybody.

Interviewer: "Medical Staff?"

HCA: "Yes, they all join in and help out,.. apart from the scrub nurse.

Interviewer: " The scrub nurse is not part of the team?"

HCA: "No, well she can't do anything to help because she is scrubbed and can't touch anything. That's what I mean.

Although this view of group membership, which excludes the scrub nurse, was not commonly held, it serves to illustrate the diversity of conceptualisation of groups within the operating theatre. The idea of the single multidisciplinary group was shared by one of the medical participants, a surgical registrar:

Registrar: "Certainly we are one team, we wouldn't get very far if we didn't consider ourselves to be working together. We rely on the nurses on hundred percent.."

The above extract introduces the idea of interdependence within a unitary group in order to achieve a team goal. The relevance of this concept to both team working and as a source of conflict are described in section 7.24. However, in terms of establishing the self-perception of the theatre team as a single unit, the prevalent view was that there is more than one group, and that these separate, interdependent groups come together to facilitate surgery.

The following view expressed by an E grade staff nurse typifies the themes which recurred in response to enquiries on this subject:

KE2: " There are very definite groups. The scrub group, the anaesthetic group and the surgeons."

Interviewer: "What are they attempting to achieve, would you say?"

KE2: " You could say that they have a common goal in that they are all here to enable an operation to be carried out on a patient., but I would say that they are motivated by separate agendas.....The surgeon wants to finish a list, and they don't seem to mind how long it takes. The anaesthetist wants to finish by a certain time so that they can see patients in time for another list...

A consultant anaesthetist supplied this supporting view:

Consultant Anaesthetist:

"Here I would say that the reality is that there is more than one group. I think there is an anaesthetic team, a surgical team and a nursing team. And I would say that the surgical team are the odd ones out."

Interviewer: " Why do you think they are different?"

Consultant Anaesthetist:

"Because they are specialists. They come to the same theatre and they do the same range of operations. The anaesthetists go everywhere and do any list that they are assigned to do, and so do the nursing staff. The surgeons think they are the focal point of activity..and in a way they are.

Although the above statements demonstrate the lack of a single perception of the working groups in the operating theatre, more evidence was supplied to describe the separate nature of groups, than of a single unified body. The key separating factor was presented as membership of a specific professional group, and examples were given by the participants, of ways in which separation was maintained, in particular through a system of hierarchy which although considered by some participants to

have been relegated to the past, to others it remained evident. This can be seen in the need to re establish, every so often, a hierarchical structure within the theatre, especially in respect of the recipient of service and the provider. Expectations of service level are made explicit by the surgeons on certain occasions. These include expecting gloves and gowns of the correct size to be put out for them as the following extracts from the observation notes illustrate:

Standing at the scrub sink, the consultant surgeon addressed the charge nurse, saying: " Is someone going to get some stuff [a gown and gloves] out for me?"

The surgeon was brought into the theatre, from the coffee room, by the anaesthetist. On arrival he made a general observation that he expected to be told when the patient was ready.

6.3.15 *Interdependence within the multiprofessional team*

The nature and diversity of the work observed was such, that it could not be undertaken by any single professional group. Therefore in order to achieve the common goal of successful surgical intervention, there was recognition within the sample, of the interdependence of the professional groups involved. The concept of interdependence was mentioned by all the professional groups at various times during the period of observation, and was related to their conceptualisation of team work. In the case of the surgeons, they described their dependence on the nursing staff to prepare the environment and equipment, and to get the right patient to theatre at the right time. The theatre practitioners described how they relied on each other in times of need to help them out and provide moral support. The following extracts from informal interviews with nurses and ODPs emphasise their perception of dependence in terms of support and assistance, and the centrality of these to the concept of team working in theatres:

Staff nurse: "Well you just have to trust your colleagues don't you? We are all a team here, we work together and help each other you know. That's what its all about isn't it ? Trust?"

ODP: "You need a good runner [circulating person] especially in a fast turn over list. Once you're scrubbed you can't do anything, they have to run and sort out any problems that come up during the case."

Staff nurse: "If you are scrubbed for some mammoth case, especially with a difficult surgeon, you really need someone decent circulating, it makes such a difference...you need that confidence."

The surgeons gave clear indication of the degree to which they relied on their nursing and ODP colleagues in order to be able to achieve their objectives:

"...supposing it was your department, when I arrive there, I rely on you to provide me with the wherewithal to do the surgery. I don't know where things are...."

"If you've got a good theatre sister who can really get things organised ...get the patients down, and organise the staff, that can make all the difference."

In contrast to the nurses and ODPs, the surgeons describe their dependence on nursing more in terms of provision of service than support. They looked to nursing and ODP colleagues to provide the environment, equipment and assistance they required to undertake a surgical procedure. In addition, the second extract illustrates that list management is not a medical role.

The surgeons also described their reliance on the anaesthetists to maintain the patient safely in a condition which enables surgery to take place, and to monitor and respond to the patient's needs throughout the procedure.

Anaesthetists spoke of their reliance on the nurses and operating department practitioners, to assist them in their clinical procedures, and to locate things which they would otherwise be unable to find.

"Some of the ODPs I've known for years, there are some that I would happily leave with a patient, and there are others that I would not....there is variation absolutely, but of course you rely on them because you can't leave the patient to go and find things..."

This quotation illustrates the perception of a trusting relationship similar in character to the nursing/ODP conceptualisation of dependence, but also mirrors the surgeon's idea of provision of service and supplies.

In order to be able to anticipate the needs of the surgeon, from the order in which to send for patients, to the correct instruments required for surgery, the nurses and ODPs rely on information. On some occasions this reliance was felt to be misplaced.

The dependence of one party on another to enable them to complete their work successfully can lead to the type heated exchanges described below:

[During a laparotomy]: The surgeon asked the anaesthetist several times whether the patient could be relaxed any more. He said that the abdomen was too tight and it was making the procedure difficult. The surgeon showed signs of exasperation with the anaesthetist even though the anaesthetist said he was doing everything he could.

Orthopaedic surgeon: "There is always something missing every week, I mention this to her [the sister] and where does it get me? If I put her under pressure, she goes to pieces...and she is the sister, can you imagine?"

Not only do these extracts illustrate that on some occasions help, support or equipment which are relied upon, are not forthcoming, they also reveal a source of potential frustration and conflict which may result. They relate mainly to issues which are likely, in view of surgeons comments, to be seen as lack of reliability in terms of organisation.

The interdependence of the operating theatre and external departments

Although the focus of this study has been the specific environment of the operating theatre, it became clear during the period of observation, that the functioning of the theatre cannot be considered without taking into account the significant influence of the organisation in which it is situated. By the same token, activity undertaken or delayed within the operating theatre must be seen to influence the activity of the wider hospital. Thus it can be argued that a relationship of interdependence also exists between the theatre and the wards and supporting services and departments.

6.4 *Conclusions*

Data produced in Phase 2 provided a rich and detailed picture of the work of the operating theatre. The work could be considered to be divided between a highly routinised approach to meeting the requirements of the operating list, in terms of provision of skills and equipment, and reacting to unexpected occurrences. A number of these occurrences were unexpected due to a lack of communication between the parties involved. It could be argued that lack of equipment need not have been unexpected had earlier discussion of requirements taken place between surgeons and nurses. The requirement for unplanned overtime on the part of staff members was seen as a source of conflict between the needs of the operating list in terms of what was required to complete it, and the needs of the individuals involved in relation to other commitments. This situation, it could be argued, may also have been improved if earlier communication had taken place. The role of leadership within the operating team remains unclear from the findings. Nurses and ODPs within the sample associated leadership with a supervisory or overseeing role, as might be the case in industrial models of teams, and saw no need

for such a role because they perceived no need for supervision. Attempts at leadership of this more managerial variety were seen to fail, due to the unpredictable nature of the work undertaken, which meant that the need to manage emerging problems drew focus away from the larger picture. Overall it was not possible within the sample observed, to identify a single leader who was recognised as such by all the representative professional groups. It could be argued therefore that in terms of team working a single team with a single leader directing the work could not be identified. It could also be argued that in cases of conflict between staff, particularly those belonging to different professional groups, there was no recognised mediator. By the same token, there was no identified repository for information from the component bodies of the team, nor anyone to whom suggestions for improvements could be made. It could be suggested that the 'generally addressed comments' made in frustration, may have provided the basis for positive dialogue if they happened to be addressed to an individual who was prepared to undertake that aspect of leadership

In the following chapter, the data produced from both phases of the study and from the literature, will be discussed and reasons explored for the persistence of conflict in the operating theatre, and its effects on the work carried out. In addition a description of the method of functioning of the operating team will be presented and the relationship between the conflict observed and the structure of the team considered.

CHAPTER SEVEN

DISCUSSION

This thesis sets out to explore the nature and juxtaposition of team work and conflict in NHS operating theatres in England. Initial interest in what have become the central questions of the thesis originated in accounts presented in the nursing and medical professional literature which suggested that team work was the cornerstone of operating theatre practice (DOH 2000; Sigurdsson 2001; NHS Modernisation Agency 2001, 2002; Healey *et al* 2004;), whilst others within the same professional genres suggested that inter-professional conflict served to negate many of the benefits which have been claimed for team working in this context (Farrell 1999; Simms 2000; Lewis 2001; O'Garr 2004). There was little to be found in the literature which could explain how team work and conflict could co-exist in this setting. Further reading disclosed a lack of consensus regarding the meaning of team work when applied to healthcare provision, and no conceptualisation of team working could be located which applied to the operating theatre.

The presence of conflict in the operating theatre has been described over a considerable period (Astbury 1988; Morgan 1997; Mardell 1998; Timmons and Tanner 2004; Sexton *et al* 2006), and although the results of the present study support previous findings which indicate that the main protagonists in situations of conflict are surgeons and nurses, the reasons presented in the literature for such situations are associated with generalist concepts such as poor communication or generic roles and do not consider the specific working context of the operating theatre as an influencing factor. Although the phenomena of team work and conflict, in the context of the immediate perioperative period, have been described across international literature, no studies could be located in which they had been considered jointly in terms of their possible influence on each other. This thesis contributes to the literature on team work and conflict by considering their relationship and their potential influence on service delivery and organisation in the operating theatre. This builds on previous

research which has considered the following separate concepts of team work, including; communication (Lingard *et al* 2002a, 2004a; Moss and Xiao 2004), and group cohesiveness (Undre *et al* 2006), and quantitative studies of divergent views of team working held by different professional groups (Sexton *et al* 2000, 2006). It also adds to the debates concerning the particular contribution of professional groups to the delivery of service in the operating theatre (Timmons and Tanner 2004, 2005), and the barriers to their successful interaction (Freeman *et al* 2000).

This chapter presents a discussion of the findings of both phases of the present study. NHS policy on multidisciplinary team working in the operating theatre is reviewed and it is argued that much of the literature informing this policy is underpinned either implicitly or explicitly by theories deriving from a structural functionalist perspective. The chapter opens with a rationale of the choice of structural functionalism as a suitable theoretical perspective for the discussion. This is followed by a brief outline of functionalist theory and the classic criticisms which have been applied to it. In the following sections, the reasons for the continued interprofessional conflict within theatre teams described in phases 1 and 2 of the study are explored by analysing policy from a functionalist perspective, and applying the contemporary criticisms of functionalism to the findings from this study. This analysis highlights the lack of fit between the structure of the operating theatre multidisciplinary team and the models of multidisciplinary team working described in the literature on team working.. The main findings of the study are then presented in the light of this criticism, followed by recommendations for more advantageous approach to dealing with the conflict described.

The findings of this study, described in section 7.9, illustrate the continued disorganisation and lack of fit between the working practices observed in the operating theatre, and the attributes of team working set out in the conceptual models espoused by academics (Guzzo and Shea 1992; West 1996; Firth-Cozens 1998) and those considered desirable by policy makers. (Audit Commission 2002, 2003; NHS Theatre Modernisation

Agency 2002). This thesis has also demonstrated that the short-term nature of multiprofessional operating teams means that the most direct comparison that can be made is to crews, particularly in commercial aviation. However, little could be found in the literature to describe team work or team leadership in aviation crews other than under the description of functional leadership (Adair 2006), described in section 2.52. Functional leadership emphasises the leader's role in ensuring that all contingencies are dealt with in order to meet the group goal. However, in common with descriptions of multiprofessional teams, functional leadership is presented as a taxonomy of desirable activity or traits and has little explanatory or predictive theoretical value. This is not to say that no theoretical perspective can be adopted as a framework for the discussion of the findings of this study. Indeed, there are several theoretical perspectives which could be adopted, and these are discussed in the following sections.

7.1 *Choice of theoretical perspective.*

7.1.1 *Models of team work*

As described in sections 2.4 and 2.5, the models of team working reviewed in this study have proved to be little more than lists of desirable or defining attributes for teams (Firth-Cozens 1998; Cartwright 2000; Lafasto and Larson 2001), although more theoretical models do exist, such as the team developmental sequence of 'forming, storming, norming, performing' developed by Tuckman (1965). This, for example could be used to explain how teams develop (or fail to develop) from groups of individuals to become a cohesive team by comparing their early activities with Tuckman's sequence. Unfortunately such an approach could not be considered for the present study due to the short-term nature of the multiprofessional team found in the operating theatre. Alternatively Belbin's (1981) categorisation of the roles which individuals play within teams as an extension of their own personal qualities (Belbin 1981), could be used to establish ideal role combinations within the theatre team and to seek explanation for the tensions described. However, such an exercise would be of limited value in the case of the operating theatre, as selection

of team members would still have to rely upon skills and qualification rather than desirable team role characteristics, such as 'implementer' 'completer/finisher', or 'resource/investigator', categorised by Belbin (1981).

7.1.2 *Feminism*

Alternative theoretical perspectives considered include; Feminism, which appeals due to its concern with gender domination in a patriarchal society, and is a view which might usefully explore the gender separation traditionally associated with surgery and nursing as professions, and issues of vulnerability, which have been associated with occupational segregation and male dominance (Evans 1997; Pugliesi 1999), in relation to conflict in the work environment. The Feminist project of transformative research, aimed at the establishment of collaborative, non-exploitative relationships, further promotes its usefulness as a perspective through which to examine an area in which aggression and conflict can be argued to stand in the way of interdependent collaborative working, and where a gender-specific power dynamic may be perceived, particularly in relation to the ability to change planned work. However, the present study has demonstrated that episodes of aggressive behaviour occur between female consultant surgeons and male and female nursing staff. Equally, because this study has demonstrated that operating teams are recruited from staff pools, for specific operating sessions, and because none of the professional roles within the theatre team are specific to either gender, it must be possible that all female or all male teams must occasionally exist. Therefore although the adoption of a Feminist perspective could provide an interesting insight into the working relationships in the operating theatre, its usefulness as an explanatory tool for examining conflict is diminished by the fluid nature of the gender mix within and between the professional groups involved.

7.1.3 *Models of leadership*

The findings of this study have demonstrated the difficulty in identifying leadership within a short-term group composed of separate professions.

The ethnographic phase of the study described the changing locus of leadership within the group according to the nature of specific problems. Leadership appeared not to belong to a designated individual, nor to a particular professional group. Indeed, participants from representative medical and non-medical groups questioned the need for formal leadership in a routinised work environment. Therefore, consideration was given to the adoption of a leadership theory as a theoretical perspective by which to view these findings.

Leadership theories, such as Path-Goal Leadership (Evans 1970; House 1971), Leader-Member Exchange Theory (Dansereau, Graen and Haga 1975), Servant Leadership (Greenleaf 1995) and Charismatic Leadership (Conger and Kanugo 1998) were initially considered, although as in the case of models of teams, these conceptualisations tended to evaluate the characteristics or methods of a single identified leader, and their effect on group working. Application is problematic in the present study, as one of the main findings was the lack of a single identifiable individual in that role. The lack of a single leader for the whole multidisciplinary team revives debates concerning whether or not the characteristics considered desirable for leadership can be acquired, or whether they are inherent as part of individual personality. If as Belbin (1981) suggests traits of this nature are inherent in personality, the question arises as to whether the operating theatre itself is unappealing to those who possess such traits. However, as this study proposes that the operating theatre team consists of more than one interdependent group, it could be argued that the lack of a single identifiable leader simply reflects the lack of a single identifiable group.

Having considered the above, and rather than manipulate the findings to conform to a framework, it was decided to use the theoretical perspective which best explains not only the findings of the two phases of the study, but in keeping with Layder's inclusive approach to data collection also explains the evidence from the literature which extends back over a considerable period.

7.1.4 *Functionalism*

Functionalism has been acknowledged as the main theoretical perspective underpinning NHS management and policy (Thomas *et al* 1995; Savage 2000b) since the advent of managerialism within the service in the 1970s. Although, as discussed in subsequent sections, functionalist theory has been rejected as a useful explanatory theory by mainstream sociology for the past thirty years, and receives little mention in recent undergraduate sociology texts, its legacy can be seen in the shape of the literature which dominates NHS organisational policy (Worthington 2004). This is particularly evident in the almost obsessive concern with multidisciplinary team working described by Sinclair (1992). The concept of multidisciplinary team working contains many references to systems-based functionalist thinking, organised as it is around the social distribution of knowledge and professional social structure (Housley 2003). The key attraction of multidisciplinary to the management of the NHS can be argued to consist in Durkheim's (2002) conceptualisation that the output of the team, which can be likened to a micro-version of his societal structure model, will be greater than the sum of the individual contributions. In other words the functionalist multidisciplinary approach can be considered to equate to the ideal efficiency strategy in which maximum output is gained from the resources available.

The search for efficiency within the system forms the dominant theme in the work of Lewin and Bevan cited above, and continues in the 'Productive Operating Theatre' programme announced by the NHS Institute for Innovation and Improvement, for implementation in August 2009. A key aim of this programme is to redefine the strategic role of the operating theatre within the hospital system, implement improvements throughout the wider NHS, and to achieve this through the implementation of national guidelines for 'cohesive team working within operating theatres' (NHS Institute for Innovation and Improvement 2008). The recommendations for achieving the cohesive teamworking they describe include typical functionalist traits of redesign of existing process,

interdependence of system components, and reallocation of traditional professional roles, in order to meet the needs of the system at local and national level. Changes are driven by the perceived needs of the NHS in general and are handed down through centrally derived policy and guidance to Trusts as representative components of that larger system.

Although a systems-based approach may appear to provide a fitting perspective by which to consider the relationship of systems and subsystems in a large organisation such as the NHS (Bond and Bond 1994), functionalism as a means of organisational analysis has been widely discredited (Holmwood and O'Malley 2003; Kingsbury and Scanzoni 1993; Jackson 1991). In the following sections a description is given of the origins of functionalism, its adaptation to the analysis of organisations, and its application to NHS multidisciplinary work. This is followed by a presentation of the classic criticisms which have contributed to an acceptance of its diminished usefulness as a theoretical perspective.

7.2 *An outline of functionalism*

The history of functionalism as a perspective in sociology and social reform extends back over a considerable period, and a fully inclusive account of its development and the various schemes proposed over time exceeds the scope of this thesis. The following description is, therefore, restricted to the key features of functionalism, the contributions of its main proponents, including Merton's development of functionalism as a middle-range theory and its adaptation for the analysis of organisations.

7.2.1 *The origins of functionalism*

The origins of functionalism, or functionalist analysis, are evident in late nineteenth and early twentieth century anthropology, although some authors argue that its principles can be traced back to the work of Comte (1798-1857) and Spencer (1820-1903) (Haralambos *et al* 1995). Silverman (1980) considers the seventeenth century work of Hobbes to contain the earliest concerns of functionalist thinking, specifically the influence of society over its component population. Regardless of its

precise beginnings, Durkheim (1858-1917) is generally credited with the development of functionalism, and Parsons (1902-1979) with its further refinement (Swingewood 1991). Merton, in the 1940s, then attempted to address what he had identified as the main explanatory weaknesses of functionalism and to increase its usefulness to the empirical scientist through the development of a middle-range theory. In this way, functionalism became applicable to organisations and their various subsystems.

7.2.2 *Society as a system*

From its beginnings, the basic unit of analysis for functionalists has been society (Bailey 2005), which is viewed as a system of interconnected parts which are primarily understood in terms of their 'function', or relationship and contribution to society as a whole. Functionalist theory, particularly in its earliest forms, is underpinned by the fundamental metaphor of the living organism (Kingsbury and Scanzoni 1993), in which the organs and other bodily components are grouped and organised as a system, the function of which is to sustain the organism. Following this line of thought, functionalism views society as a system which is considered a collective entity in its own right (Swingewood 1991). To continue the organic analogy, the functionalist perspective recognises that certain needs must be met in order for the organism to survive. In the same way the 'entity' of society is also considered to have certain basic needs necessary to its continued existence (Swingewood 1991; Haralambos *et al* 1995). Therefore, just as in the biological systems model, understanding any part of society relies on an analysis of its relationship to its component parts.

7.2.3 *Functional Prerequisites*

The basic requirements for continued societal existence, are also referred to as functional prerequisites (Parsons 1951). Whilst the identification of the basic needs of an organism can be argued to be relatively straightforward, as the effect of withholding such needs, can be observed in the changing condition of the organism, the identification of parallel

basic needs for society have been seen as more problematic (Waters 1994). An illustration of this problem is provided by Haralambos *et al* (1995), who observe that all societies have some form of social stratification, or hierarchical structure, and that families, for example, exist in all forms of society. This, they claim, has led to an assumption that such institutional arrangements must meet needs common to all societies. However, as both Haralambos *et al* (1995) and Swingewood (1991) point out, the question of whether the institution meets the same needs in all societies should be investigated rather than assumed.

The identification of functional prerequisites has also been approached from the point of view of the conditions under which society would cease to exist. Levy (1952) includes amongst these: total apathy, extinction and total internal war. From this perspective the prerequisites would equate to the contingencies which prevent the above from occurring. Unfortunately, as Haralambos *et al* (1995) point out, this provides a poor fit with the organic analogy as society can be considered to change and adapt according to circumstances rather than die when prerequisites are unmet. Thus the identification of societal needs which are totally indispensable is problematic.

7.3 *The contribution of Emile Durkheim*

Durkheim was of the firm opinion that society could be treated as an entity, (Giddens 1997) and insisted that in addition to having a reality of its own, it should also be viewed as a thing greater than the sum of its individual parts. Regardless of later criticisms which question the logic of considering society as something separate from its membership and as an entity which can shape the actions of individuals rather than something constructed by them (Holmwood and O'Malley 2003), this perception has endured, and remains evident in more recent versions of functionalist theory applied to both organisations (Jackson 1991), and teams (Housley 2003). Central to Durkheim's argument was the conviction that members of society are constrained by 'social facts' which include received moral codes and shared ways of behaviour. These he considered to influence the

way in which people act think and feel under an external coercive and controlling power. The conviction that social facts could, for the purposes of analysis, be treated as quite separate from social actors, enabled Durkheim to treat society as subject to its own laws and as a source of explanation of social action and the nature of society itself (Kingsbury and Scanzoni 1993; Haralambos *et al* 1995).

Durkheim proposed two ways of explaining social facts. The first was to explain the cause of the social fact, by seeking to explain its origin through analysis of the preceding social facts rather than the consciousness of the social actors. An example of this can be seen in his study of suicide (Durkheim 2002), in which he concluded that causes of variations in suicide rates were to be found in the preceding social facts in society, not in the individual. However, Durkheim also considered that explanation of a social fact required analysis of its function, or contribution, to the needs of society such as its function in the establishment of social order. Although Durkheim recognised the influence of individual self-interest, and the difficulty of reconciling this with the influence of society on individuals, he maintained his assumption that there exists a collective conscience, or agreement on moral issues without which conflict and disorder would result.

7.4 *The contribution of Talcott Parsons*

During the 1940s and 1950s, Parsons was considered to be the pre-eminent theorist in American sociology (Haralambos *et al* 1991). Parsons was chiefly concerned with the question of how social order is possible. According to his view social life is characterised by mutual advantage and peaceful co-operation, rather than by mutual hostility and destruction. Parsons's work was influenced by that of the Seventeenth Century philosopher Hobbes (Silverman 1980), who recognised that if left to their own devices individuals would resort to any means including criminal activity to achieve their ends. This, he considered would result in chaos (Haralambos *et al* 1995), and is only prevented by the universal desire for self-preservation. Parsons shared Durkheim's view that Hobbes's

depiction of humanity pursuing personal goals restrained only by a mutual agreement, was insufficient to explain social order. Whilst agreeing that commitment to common values provides the basis for social order, he considered that fear of the consequences was insufficient to ensure adherence to rules (Swingewood 1991). In addition people must, he concluded, be guided by a commitment to a shared moral code.

So far, the basic concepts of functionalism have been presented in which society as the main focus of analysis, is conceived as an entity with needs which must be met for continued survival. Members of society act under its influence and in accordance with its needs, with societal order maintained by shared values and moral codes, instilled from their earliest integration. Society as in the case of the organic metaphor, can be understood as a system by examining the relationship of its component parts. However, critics have drawn attention to the lack of fit between biological systems and sentient society members, the logic of its explanations, and the universality of societal structures. This has contributed to the steady decline from favour of functionalism, which has been considered to be partly due to damaging criticism (Waters 1994), partly because other approaches were seen to answer questions more successfully, (Silverman 1985), and partly as Haralambos *et al* (1995) suggest because it simply went out of fashion. Although it is now considered to have fallen into almost complete disuse (Coleman 1990), functionalism enjoyed a lengthy period of favour culminating in its dominance of American sociology during the 1940s and 1950s (Haralambos *et al* 1995).

7.5 *General criticisms of the functionalist approach*

7.5.1 *The teleological reversal*

Part of the criticism directed at functionalism concerns the logic of functionalist enquiry. In particular it is argued that the type of explanation employed is teleological. A teleological explanation states that the parts

of a system exist because of their beneficial consequences for the system as a whole. The main objection to this is that it treats an effect as a cause (Silverman 1980). But an effect cannot explain a cause since causes must always precede effects. To give an example, stratification within society may be considered beneficial to the system, but the beneficial effects did not cause that part of the system to come into being, and functional analysis cannot satisfactorily explain why it did.

7.5.2 *Assessing Effects*

Haralambos *et al* (1995) consider functionalism to be on stronger ground in its argument that continued existence of an institution may be explained in terms of its effects. Thus once an institution had originated it continues to exist if on balance it has beneficial effects for the system. However there are problems with this explanation. It is extremely difficult to establish that the net effect of any institution is beneficial to society. A knowledge of all its effects would be required in order to weigh the balance of functions and dysfunctions. The problem is illustrated by returning to the analogy of society and the physical organism. It is possible to show that certain parts of an organism make positive contributions to its maintenance since if those parts stopped functioning life would cease. As societies change rather than die, it is problematic to apply similar criteria. In addition there are criteria for assessing the health of organisms, similar standards do not exist in the case of society. Thus it is hard to sustain an argument to say that institutions continue to exist because they are on balance beneficial to society.

7.5.3 *Determinism*

Functionalism has been criticised for what has been regarded as a deterministic view of human action. That is to say, that human behaviour is portrayed as being determined by the system. Particularly in respect of the needs of the system, the behaviour of the membership is shaped to meet those needs. It is argued that to consider the social system as a thing which is external to the membership represents a 'reification' of a social system (Holmwood and O'Malley 2003). Functionalists have in essence

tended to portray the social system as an active agent whereas in reality it can be argued that the only active agents are the societal members.

7.5.4 *Value consensus and social order*

Functionalists such as Parsons who consider the solution to social order to lie in value consensus have been criticised on the grounds that consensus is assumed rather than demonstrated. Equally it could be argued that consensus in and of itself may not necessarily result in social order. If for instance as Haralambos *et al* (1995) suggest everyone subscribed to notions of violence and antisocial behaviour, this would not be a consensus conducive to social order.

7.5.5 *Coercion and Conflict*

Critics of functionalism have argued that it tends to ignore coercion and conflict. In Parsonian functionalism although the importance of the ends and values that people pursue is stressed, the question of whose ends and values they are is not adequately addressed. Lockwood (1970) in his criticism of Parsons's approach suggests that by focusing on the stabilising effects of values in society he fails to recognise the conflicts of interest that tend to produce instability and disorder. Since all social systems involve competition for scarce resources, conflicts of interest are built into society. Conflict according to Lockwood, is not simply a minor issue but a central and integral part of the system itself.

7.6 *Merton's redefinition of functionalist analysis*

A key development in functional analysis, and one which led to the development of a more useful analytical tool, stemmed from the work of Merton (1967). Merton considered the schemes outlined by Parsons to be too grand in their attempt to be inclusive of all the levels and structures exhibited by society. He argued that the focus of functionalism should change from that proposed by Parsons, specifically the functions of social systems, to the observed consequences of social events (Behling 1980). Merton's revisions included the introduction of three new concepts. Firstly that functions, defined in section 7.2.2 as those activities which

meet the needs of the system, can be 'latent' (unintended or unrecognised), as well as manifest, (intended or recognised). Secondly, because not all activities fulfil positive functions, or at least because they can be considered not to be positive for the whole system, they can be 'dysfunctional' as well as 'functional' (Bond and Bond 1994). In addition to the classic criticisms of functionalism set out above, Merton set out three main assumptions central to the versions of functionalism presented by Parsons and Durkheim, which he considered to be of questionable utility. His critique of these assumptions are described below.

7.6.1 *The problem of functional unity*

This assumption states that any part of the social system is functional for the entire system, and work together for the maintenance and integration of society as a whole. Merton provides the example of religious pluralism as an illustration of how a particular faith or branch of that faith is functional for a specific section of society, not for society as a whole. Indeed he goes on to argue that this example demonstrates functional division rather than unity. To take this further, the assumption of functional unity implies that a change to one part of the system must mean a change for the system as a whole. However in Merton's example it can be argued that a change to a specific faith may have little or no effect on those who do not subscribe to it. For this reason Merton asserts that functional unity should not be assumed but should form the basis of investigation.

7.6.2 *Functions, dysfunctions and non-functions*

Merton argued that the assumption that every aspect of the social system performs a positive function is not only premature, it may well be incorrect. Instead he considers that functional analysis should proceed from the assumption that any part of society may be functional, dysfunctional or non-functional. In addition it must be clearly identified for whom a particular part is functional, dysfunctional or non-functional. An example being that poverty may be dysfunctional for the poor but not for the non-poor. Therefore the assumption that all aspects of the social

system perform positive functions for the whole system, functionally, dysfunctionally, or non-functionally, may be differently assessed according to the circumstances of the assessor (Silverman 1980).

7.6.3 *The problem of indispensibility*

Merton's third criticism was levelled at the assumption that certain institutions or social arrangements are indispensable to society. To take once again the example of religion, Merton questioned whether it could be considered to play a unique and indispensable role in society. He rejected this notion in favour of the idea of 'functional equivalents' or 'functional alternatives', citing communism as being able to provide an alternative function for religion in some societies. Merton claimed that his framework for functionalist analysis answered the criticism that functionalism is ideologically based, and argued that society should be analysed in terms of their effects or consequences on society as a whole, and on groups and individuals within society. Since these effects can be judged to be functional, dysfunctional or non-functional, the value judgement in the assumption, stated in the previous section, that all parts of the system are functional, is therefore removed.

Merton's revised version of functionalism can be argued to redirect the focus of analysis toward behaviour which is not always what it seems, and the consequences of actions which are not always as intended. However, as Waters (1994) points out, Merton only deals with consequences in terms of whether or not they fulfil the need held to exist within the system or not. Because of this, the causes as distinct from the consequences of actions are not satisfactorily explained (Bond and Bond 1994). Although Merton deals with conflict which he describes as either functional or dysfunctional for the system, he does not deal with individuals or groups, but rather at the effects of conflict on system needs (Haralambos *et al* 1995)

7.7 *Functionalism as applied to organisational management*

The application of functional analysis to organisations may be argued to have much to recommend it from a managerial perspective. As in Merton's (1957) explanation, the main thrust of functional analysis exists in the interpretation of data by identifying the consequences for the superordinate structures in which they are situated. The outcome of such analysis would be the identification of structures which are functional or dysfunctional for the system. Such an approach, may be considered to serve the needs of management in helping to understand the implications of various structures within the organisation for its survival. Selznick (1948) identified what he described as the stable needs or functional prerequisites for organisations deriving from their nature as adaptive structures, which include: stability of lines of authority and communication, a homogenous outlook regarding the role of the organisation, and continuity of policy and sources of its determination. However, as Behling (1980) points out in large organisations with large numbers of employees at various levels there may not be a homogenous outlook with respect to purpose because of differences in individual or group perspectives, or because of ambiguity of stated goals by the organisation itself.

Regardless of the lack of concern with individuals and groups, evident in the work of Selznick and Merton, other versions of functionalism applied to the analysis of organisations have been redesigned to include them, Behling (1980) for example, recommends that the application of functionalist analysis to organisations must:

- 1 Seek understanding of events, artifacts or processes (structures in the terminology of functional analysis) in terms of their consequences (functions and dysfunctions) for superordinate systems of which they are parts, rather than by attempting to identify those things which cause them.

- 2 Do so by using concepts and constructs derived from study of the specific type of situation under investigation rather than by attempting to impose single conceptual frameworks on all areas of study.

Behling (1980) p 214

Once again these recommendations highlight the lack of concern with cause, favouring instead a focus on the consequences of actions and events on the larger system. At the same time Behling proposes avoidance of the application of grand overarching and general frameworks, of the sort advocated by Durkheim and Parsons, in favour of frameworks derived from and specific to the area of analysis.

7.8 *Specific criticisms of functionalist analysis in relation to organisational behaviour*

The classic criticisms of functionalist analysis can certainly be argued to pertain to its application to organisational analysis, particularly questions of whether a system can be considered to have 'needs', (reification) and lack of concern with distinguishing causes of action from their consequences. The inherent explanatory weaknesses of the functionalist position in this context are succinctly stated by Silverman:

" ...if we analyse the organisation in terms of its needs, [reification] then, except teleologically, we are in no position to consider the causes, as distinct from the consequences, of action; for the basic 'cause' of any act can only be that the system made it 'necessary'".

(Silverman 1970 p 53)

In addition to the general criticisms, already described, specific problems of applying functionalist theory to organisations (Behling 1980), are summarised below:

7.8.1 *Confusion of function and purpose*

It is assumed that functionality must be an intended product of individuals, who would be able to identify the motivation for their actions

whether driven by a specific incentive, or simply conformity to custom. Critics have pointed out that not everything is undertaken with a clear outcome in mind, or engineered to perform a foreseen needed function.

7.8.2 *The confusion of functions with the structures which perform them.*

This refers to the idea that the removal of certain structures will lead to elimination of their function. In this way events and processes are retained to perform functions, in some cases for long periods, when their continuation is not necessary in order for the desired function to continue. In other words the function is not necessarily tied to the structure associated with its performance.

7.8.3 *The assumption of universal functionality*

Some structures may exist without having any functional value whatsoever. However, in benign and particularly large organisations, of which the NHS may be considered an example, structures may exist for long periods even though they are non-functional or even dysfunctional.

7.8.4 *The assumption of closely linked systems*

Even though in the biological model closely linked systems can be identified, in that removal of one function can have profound effects on the organic structure. However, as (Behling 1980) points out, large organisations may publish ambiguous goals or operate on poorly defined objectives, which may not be understood by its membership. In addition the input of members within the organisation may vary considerably at different times and in different areas. This concept was described by Weik (1979) as 'loosely-coupled' systems in the context of the American education system. Weik identified such systems as having the following characteristics; a choice of means to produce the same result, lack of coordination, absence of regulations, and highly connected networks with very slow feedback lines. Although these attributes appear negative, Weik suggests that in certain circumstances they may help the organisation, by allowing the development of local adaptations and creative solutions, and by allowing more self-determination by team

members. He particularly notes that loosely-coupled systems allow for the breakdown of subsystems without damaging the whole organisation. If this is the case, it could be argued that if any of the subsystems in a larger organisation conform to the 'loosely-coupled' or 'not closely linked' definition then functional unity cannot be assumed for the system as a whole, because change to one part of the system would be limited to that part only. As Behling (1980) clearly states:

'Functional analysis can be applied only to systems where functional unity can be demonstrated.'

Behling (1980) p 219

Thus, the usefulness of functional analysis rests at least in part on the assumption with which Merton took issue in section 7.6 specifically that all parts of the system are functional for the whole system, and that the system is so tightly integrated, that a change to one part must influence all others. These points, it could be argued, bring into question whether the unity of the organic systems model has any useful application to organisational analysis.

Although the functionalist perspective may be considered to have its useful points in terms of mapping structure and process (Bond and Bond 1994) its position in the academic sociological syllabus has become considerably diminished, due to long-recognised limitations (Silverman 1970; Behling 1980; Coleman 1990) This, it could be argued, has resulted in a divorce between the continued production of policy guidance based on functionalist concepts and the application of current academic criticism.

7.9 *Key findings from both phases of the study*

The literature reviewed in Chapter Two, and the subsequent focus group work, led to the compilation of the following research questions:

- A. How does conflict impact on the work of the Operating Department team?
- B. How does work within the Operating Department fit with models of team work?

The approach taken to address these questions was a sequential explanatory mixed-method design (Cresswell 2003). The initial survey phase informed the design of the subsequent ethnography. The mixed method approach of the thesis facilitated the exploration of ways in which the participants, representing the various professional groups, used their perceptions of situations and working relationships in the production of strategies for organising their work. The ethnographic approach used in the present study enabled the production of data through observation and informal interview. The analysis of the data using the Constant Comparative method within Layder's (1998) Adaptive Theory, allowed an inductive approach to theory generation. By these means, the following main findings were produced:

The findings of the study demonstrate that disagreement between surgeons, and nurses and ODPs, and aggression between consultant surgeons and nurses is frequent and widespread. When aggression was encountered the preferred method of dealing with it was reported to be confrontation. Participants felt that their role within the theatre work group was, in many cases, not understood by their colleagues in different professional groups, and that these colleagues did not necessarily share their goals for patient care. Theatre work was seen to be highly routinised, and the work of nurses and ODPs was observed to be intuitive and lacking in direction. Leadership and co-ordination on the part of nurses and ODPs was hampered by the ability of surgeons to make changes to planned work at short notice. Preparations for planned work were observed to be based on unreliable sources of information, even when more reliable sources were at hand. All types of work, including low grade activities, such as cleaning and refuse disposal, were undertaken by non-medical staff of all grades, and a general lack of

agreement was seen between participants, regarding team or group membership, and the qualities required for effective working within teams or groups.

7.10 *Limitations of the study*

Limitations were identified in both phases of the study. In the survey, the findings are compromised by the method used to obtain the sample, and the constraints imposed by the Data Protection Act (1998). However, the sample was drawn from all the major regions of England and contained a representative number of all the different categories and grades of theatre staff employed in the UK, allowing confidence to be placed in the typicality of the findings as characteristic of theatre working across the country, rather than as a consequence of local influence. The observational study was undertaken in two London teaching hospitals, and it could be argued therefore, that it cannot be known whether the findings would be similar in a non-teaching hospital and / or in a rural setting. However, the findings of the survey and literature review provide persuasive evidence that the nature of theatre work, and its associated problems, are similar in character internationally. The contribution of this thesis is to develop a theoretical explanation of the findings which can be generalised to all settings which share those characteristics.

7.11 *Key criticism of the application of functionalist theoretical perspective to operating theatre teams*

The lengthy catalogue of NHS policy regarding the use of multiprofessional teams in the operating theatre has demonstrated its failure to work in practice. This, it can be argued, is due to the assumptions concerning the roles and structure in multidisciplinary teams, described in the literature and envisioned by policy makers, which are not borne out in the reality of the observed work of the operating theatre.

The notion of the multidisciplinary team describes a specific mode of social organisation which closely follows Durkheim's conceptualisation of stratification based on roles and the social distribution of knowledge. Of

particular interest to those seeking to create efficiency within the systems-based health service was Durkheim's postulation that the outcome of such social organisation would be an outcome greater than the sum of its parts. However, the assumptions which underpin the functionalist multidisciplinary model such as shared values and moral codes, common goals, knowledge-based professional social stratification, and determinism rather than independent reasoning, are not borne out in the findings of this study.

As described earlier, the structure and mode of operation of the theatre team as described in figure 7.1, can be likened to a crew, that is to say a short term team which comes into being with different individuals filling the roles, only for the duration of the operating session. Thus, the opportunities for the establishment of shared values and moral codes, and the clarification of common goals are denied, leaving the team to follow goals and values which are not necessarily theirs, but which are handed down from the organisation.

The findings of this study present an argument that a dual system of social organisation is in place within the operating theatre. If the functionalist position is accepted that outside the multidisciplinary theatre team social stratification is based on professional status and the social distribution of knowledge, then there is a clear structure which places the medical profession at the top, and the semi-professions below. Each group has its own specific level of technical skill, knowledge and autonomy. This can be argued to represent the focus of NHS management and policy in terms of its attempts to defragment the elements of skills and knowledge in order to achieve the outcome greater than the sum of its parts promised by the functionalist view of multidisciplinary. However, it can be argued that the simple juxtaposition of the professional groups is insufficient to achieve this goal without a concurrent structure of management, leadership and planning within the team. This, it could be argued, sets the scene for tension between the established social stratification which exists in the NHS outside the specific context of the operating theatre, , and the

leadership and management hierarchy required to co-ordinate and maximise the multidisciplinary contributions when the team is convened in the operating theatre. The findings of this study provide no evidence that the senior surgeons have either the management skills or inclination to manage the activity of all levels of the theatre team. If this is the case, they must accept direction from the semi-professions. The findings of the present study show the clear reluctance of the nursing and ODP groups to adopt such a position, preferring instead low-level functional leadership described in section 2.52. As described in subsequent sections the results of the Phase 1 survey showed the main incidents of aggression to be between senior surgeons and nurses and to concern not technical skills, but list management issues, this suggests that the source of such aggression can be linked to the dissolution of profession-based stratification within the operating theatre team, and intermittent attempts to re-establish it.

Although conflict has been identified as a major problem in operating theatres internationally, the causes of such conflict have remained largely unexplored. The use of a structural functionalist perspective to explore the premise underpinning NHS policy on multi-disciplinarity and in particular the critical review of that policy through the application of criticisms generally applied to functionalism, has enabled a theoretical explanation to develop as to why conflict persists despite the application of a succession of policy recommendations. This thesis argues that the causes of conflict in the operating theatre must be explored in order to find a way to, lessen the detrimental effect on communication, list management and working conditions identified in the findings of the study.

7.12 *Exploring the interaction of the professional groups identified in the first phase of the study*

The classic work of Roethlisberger and Dixon (1939) has been mentioned earlier in the thesis, in relation to the importance of meeting the psychological and social needs of the workforce, including a sense of belonging to a group, and being valued, before efficiency and productivity

goals can be achieved. These concepts have been echoed in publications advocating team work in theatres up to the present. However, as in the case of Roethlisberger and Dixon's work in the Hawthorne studies, the functionalist approach then, as now, directed attention away from the conflict that individuals may experience with the system, towards redesigning practice to better meet identified system 'needs'. Professional group divisions demonstrated in this study appear to have been tacitly recognised in the recommendations of official reports which advocate closure of those divisions with the aim of producing a single multiprofessional working group whose common purpose will be met through better communication and closer working relationships. Thus the consequences of interprofessional distancing and conflict are recognised as detrimental to the objectives of the organisation, whilst the causes remain unexplored.

The repetition of these recommendations over an extensive period, suggest that factors which prevent the evolution of the desired single group remain. Far from a homogenised and harmonious single group, this study illustrates the conditions of aggression and disagreement which form a prominent feature of group working in the operating theatre. In addition the findings of this study demonstrate the acceptance, within the sample, of three separate groups divided by profession. A discussion of these findings and their implications for working practices are now presented as an exploration of the current situation and the potential to achieve closer group working.

7.13 *The national spread of incidents of disagreement within and between professional groups.*

This study sought to explore the extent to which the reports of conflict in the operating theatre published in international papers were relevant to English NHS operating theatres. This information could not be obtained from existing sources, but was required in order to assess the evenness of spread of conflict in operating theatres across the country, and to obtain an indication of the potential usefulness of the study. Therefore the data

required to address the initial questions of the study were obtained through a quantitative postal survey, administered to a random sample of NHS operating theatres in England.

In the six months before the survey, 69% of respondents could recall disagreements between consultant surgeons and nurses. These findings corroborate earlier studies conducted in the UK and other countries regarding disagreement between nurses (Lewis 2001), between surgeons and nurses (Blakeley *et al* 1996; Hamlin 2000) and conflict between operating and ward personnel (Pape 1999). The findings of the present study suggest that one way in which conflict arises in theatres, stems from the perceived lack of consideration or value, extended from one professional group to another. Even if the common goal from the point of view of the organisation is considered to be clear, specifically; that the patients will receive their surgery safely and efficiently within an allotted time frame, the needs and priorities of individuals and professional groups are held in conflict over profession-based concerns regarding what else must be achieved *en route*. This, it could be argued, provides an illustration of the autonomy attached to functionalist notions of profession-based stratification in which consultant surgeons are able to prioritise their own professional, and in some cases personal, agenda over the stated goal of the system.

The findings of the survey also support the argument that issues relating to the smooth conduct of the operating list provide the main sources of interprofessional disagreement (Undre *et al* 2006). Late running of the list was identified as the major source of disagreement, supporting the findings of the study by Undre *et al* (2006). Scenes of disagreement over list management issues were also seen during the observational phase of the study, and on occasion these manifested themselves in heated debate. However, although the nursing staff reported the highest perceptions of disagreement between themselves and the surgeons, the most vocal opponents to list change and overrun were usually the anaesthetists. Although no specific reason was discovered for this, the anaesthetists did

point out in interview, that they had other calls on their time, and generally took the apparent expectation of the surgeons, that they would stay until the list finished, to reflect a lack of consideration. Clear illustrations of this were seen during periods of observation, particularly; the incidents where an anaesthetist was expected to stay beyond the initially agreed finishing time of the list without any discussion of this requirement, and where the anaesthetist resorted to threatening to switch off the anaesthetic as a last resort to ensure timely conclusion of the list. Examples were also seen in which the nursing staff were told of a change to the order of the list, or of an overrun, without apparent consideration of the inconvenience that this might cause. These results illustrate two key points: firstly that the disagreement and subsequent aggression centre on issues of management and leadership. No disagreements were seen to result from dissatisfaction with clinical skill. This could be argued to support the suggestion made in section 7.11, that two systems are at work in the operating theatre team, an established clinical system, and a poorly developed management and leadership system. Professional and clinical roles and structure are clear from the functionalist, and therefore policy perspective, whilst management and leadership roles are not. Thus, what could be considered the key issue of who should lead and manage the multidisciplinary team in order to optimise its expected output potential, receives little or no attention in professional guidance or NHS policy.

The wider implications of over-running operating lists described by Walby and Greenwell *et al* (1994) are also supported, in both phases of the study. Clear evidence was seen of delays to planned operating due to the patient not being completely prepared for surgery whilst at the same time late finishing of the operating list can be seen to disrupt planned ward activities. Thus this factor appears to be major ingredient in the breakdown of intra-departmental co-operation between wards and the theatre, as identified by Pape (1999).

7.14 *The frequency of perceived aggressive behaviour demonstrated by operating theatre personnel*

Aggressive behaviour between surgeons and nurses and within professional groups for nurses and ODPs also appear, on the evidence of the present investigation, to support the findings of existing smaller scale studies and anecdotal accounts (see for example Dunn 2003; Firth-Cozens 2004; Lingard *et al* 2002b, 2004b Moss and Xiao 2004). Such aggression between professional groups has been shown to be detrimental to safe and efficient working practices and can hinder the effective resolution of disagreements (Simms 2000). Lingard *et al* (2004a) report that aggressive behaviour in theatre contributes to the frequently *ad hoc* and reactionary manner in which highly important information tends to be conveyed in operating departments. Thus, aggressive behaviour appears to be a phenomenon exhibited by operating theatre staff generally.

Aggressive behaviour, although reported in the survey, was seen less frequently in the observation sessions, than might be expected. Over half of the survey respondents, (53.4% $n=209$) reported aggressive episodes from consultant surgeons, and it was therefore anticipated that such occurrences would be readily observable in the field. This was not the case. It could be argued that the presence of the observer may have had a modifying effect on behaviour. However this seems unlikely as the surgeons, for the most part, were apparently unaware of the researcher's presence. The reporting of aggressive incidents by nursing staff continued during the period of observation, and thus it could be considered that the aggression reported may be of a more subtle description than might be anticipated, or that certain acts unintended as aggression may be interpreted as such by the recipient. Aggressive behaviour, where it was observed, was mainly between the consultant surgeons and the nursing staff, and frequently concerned inefficiency in the list, in terms of lost time, or about the lack of provision of required equipment which was considered by the surgeons to be routine, and could therefore reasonably have been anticipated. The time constraints imposed and monitored by the hospital management as a key element in creating efficiency within a

larger system, contribute to the stress of inadequate list management, which forms the central theme of most of the reported and observed conflict in this study. Closer communication between the professional groups which comprise the immediate short-term team, and which could lessen delay, does not usually take place. The reasons for this lack of what has been argued to be a central concept of team working can be attributed in this study, to a lack of perceived need, and in some cases it could be argued, reluctance to generate further aggression. The act of 'ignoring', was perceived by staff to be an aggressive act, and could include the lack of acknowledgement of nurses and ODPs when scrubbed, and lack of inclusion in the team. This phenomenon could be considered to represent a further legacy of functionalism within the organisation in the shape of an attempt on the part of the surgeons to re-establish their position in a profession-based mode of societal organisation, whilst in the context of the theatre team it is argued, that an alternative structure based on management and leadership vies for position.

The preferred way of coping with aggression by respondents in the present study was reported to be confrontation. This finding was not borne out in the existing literature. For example Timmons and Tanner (2005) suggest that operating department nurses strive to 'keep surgeons happy' regardless of their own views or needs while Simms (2000) concluded that aggression is most likely to result in 'learned helplessness' (Seligman 1975), passivity, and reduced self-confidence. These results were not borne out in observation either. The little confrontation seen was not directed toward seeking solutions to problems, but was more usually in the form of a rebuke, or to apportion blame.

The approach described by Timmons and Tanner (2005), to avoiding aggressive behaviour was observed, in the present study, the form of 'jollyng the surgeon along' This was a technique used mainly by the senior nursing staff to pre-empt an aggressive episode. On one occasion a similar technique was observed where the roles were reversed. The surgeon, having made a last minute change to the order of the list,

attempted to avoid an aggressive response from the sister, by resorting to flattery although behaviour of this sort was an exception.

Efforts to pacify the surgeon reported by Timmons and Tanner (2005) appeared in this study, peculiar to nursing staff. They were not shared by ODPs, who are the other professional group functioning in an immediately supporting role to the surgeon. Nurses' attempts to keep the peace may reflect a gender issue, as most nurses are female, in comparison to surgeons who are still a male dominated group (Evans 1997). The extent to which socialisation into a particular cultural role affects this issue suggests a topic for future exploration, although socialisation could be considered to have an influence in regard to the response of nurses to impending aggression from surgeons. In the second example, the surgeon's manipulation of the sister could be explained as subjugation in a medically dominated hierarchy although nurses within this study were at pains to point out that none existed.

7.15 *The relationship of stress to aggressive behaviour in the operating theatre*

The reaction of nursing staff to stress is the subject of the classic work of Menzies Lyth (1988). In this work she describes how nurses react to conflict and anxiety by projecting their own failings onto junior staff. She also describes the development of a reduced sense of responsibility, and the way in which senior staff undertake low level tasks which could have been allocated to juniors. The undertaking of low level tasks by senior nurses and ODPs whilst junior staff undertook higher level tasks, was observed on numerous occasions during the study. This activity also corresponds to the functional leadership concept of undertaking any task in order to meet the needs of the system. This was described by nursing participants in the study as 'helping out' and was perceived by them to represent an important element of team working. However it could be argued that the reduced sense of responsibility described by Menzies Lyth is an equally plausible explanation.

Amongst other activities relating to stress, Menzies Lyth describes how nurses avoid responsibility for decision making, by the excessive use of

checklists, and consulting staff of all levels as a method of spreading responsibility. Examples of this type of behaviour were particularly evident during the study when phone calls were received in theatre from the wards to explain that a patient would be delayed, and asking whether the list order would be changed. Nurses and ODPs were seen to spread this information widely among colleagues of all grades, and usually deferred making a decision until a consensus was reached. Dunn (2003) describes the co-dependency and introversion that can result from stress, which could explain the observed preference of staff to remain in their professional groups. Davies (1989) found operating theatre staff to be apathetic and isolated, a finding that was supported by Dewland and Dewland (1999), who describe the apparent indifference displayed by stressed nurses, and suggest that this behaviour could further exclude them from decision making processes. These findings contribute a possible explanation for the lack of action taken by nursing and ODP staff, in the present study, who were prepared to wait patiently in theatre for the surgeon to arrive, even though the patient was ready and the list start time had passed. Explanations were given by nursing participants for this inaction, and these frequently included a statement which indicated that they had done what they were supposed to do, and so waiting was the only course of action to be taken. It could be considered that other courses of action were open to these staff, although their apparent preferred lack of involvement appears to support the findings reported above (Davies 1989; Dewland and Dewland 1999).

Although the aggressive behaviour reported in this study, may be considered to be only one of several contributory factors to the stressful environment of the operating theatre, the first phase of the study indicated that it was widespread and commonly encountered. It could be argued that its effects, as described above, cannot be consistent with efficient management of the theatre.

In summary, the present study demonstrates that although there is a perception of aggression, within the sample, from consultant surgeons,

this was available to direct observation less frequently than might have been anticipated from the results of the phase one survey. Observed episodes of aggressive behaviour in the present study were linked to poor list management or failures to provide equipment required for the surgery, or the skills needed to operate it. The impact of this perceived atmosphere of aggression led to nurses reporting feelings of not being valued, and claims that it was not possible to keep abreast of the various demands of the surgeons. Although confrontation was described by the survey respondents as the preferred way of dealing with aggression, this was rarely seen during observation sessions. The nurses, in particular, directed efforts towards avoiding aggression, by the use of diversionary tactics, described by Timmons and Tanner (2005), or by avoiding responsibility and undertaking the work of junior staff, which corresponds to the effects of anxiety in institutions described by Menzies Lyth (1988).

7.16 *Communication within and between groups*

The early work of Homans (1951) on work group communications has influenced more recent research, particularly the effect of hierarchical distancing as a barrier to communication, (Jackson 1996; Carletta *et al* 1998). Within this study, nurses were observed to be particularly reluctant to address surgeons directly even when seeking important information, and as described in section 7.7 when approached, senior surgeons were observed to ignore staff, even to the point of walking away. The impact of this distancing behaviour could be argued to contribute to the reluctance of nurses to approach surgeons for information in future, as described in the findings of Carletta *et al* (1998). As an alternative, staff were seen to choose less reliable sources of information, such as checklists of the surgeon's preferences which were sometimes out of date, or printed versions of the operating list, which may have been revised elsewhere. In addition to the quality of information obtained from these sources, feedback and clarification, which is considered highly important to effective communication (Taylor and Campbell 1999) is denied. A further barrier to communication between surgeons, and nurses and ODPs was uncovered in the findings of the present study. Consultant surgeons

revealed at interview, that they considered communication with the theatre nurses regarding their requirements to be unnecessary. This was because they considered their needs to be already known, and to be unchanging. This was frequently disproved in observation, and often resulted in delay. Thus, it could be argued that a combination of reticence on the part of nursing staff to seek information from the surgeons, combined with the surgeon's distancing activities and perceived lack of the need to impart any, contributes to one of the most significant barriers to interprofessional communication in this context. Functionalist solutions embodied in NHS literature and policy directives relating to multi-disciplinary team working assume a consensus and leadership not evident in the data. Furthermore the adoption of functionalist solutions by policy makers to address conflict fails to take account of functionalist explanations of that conflict, ie it must be serving a useful 'functionalist' purpose or it wouldn't be there. The data collected in the study could not identify a useful purpose for the conflict and therefore it could be described as dysfunctional using Merton's perspective on functionalism. However, the implementation of solutions to conflict derived from functionalist perspectives are subject to the limitations of a functionalist explanation, in that they are designed to address the effects of conflict rather than seeking an explanation of the causes.

7.17 *Leadership in the operating theatre*

Descriptions of the leadership responsibilities of theatre nurses can be found in the literature. These include responsibility for safety and effectiveness of care, co-ordinated across disciplines (Mahlmeister 1998), and Articulation Work (Strauss *et al* 1985), which involves the organising of a collaborative effort towards and intended goal. Even though the Articulation Work described by Strauss *et al* (1985) may be considered more relevant to systems used in the United States, an argument can be made for similarity of process and goals in the UK, and therefore that a similar system of organisation may be required. However, in the observation sessions, little or no attempt was seen to be made towards any such undertaking. Instead, functional leadership as described in section

2.52 was commonly observed. On the limited occasions when a more structured system of leadership was attempted, plans and arrangements were observed to be thrown into disarray due to the surgeons ability to make sudden, although arguably valid, changes to the planned list. Therefore a system of self-allocation of work was usually observed with little intervention from senior staff. This may be related to distancing from accountability described in previous sections, but was defended in the present study by the junior staff who claimed to require no supervision or organisation because of the routine nature of their work. This finding was also a feature of Menzies Lyth's work (Menzies Lyth 1988). These findings can be argued to illustrate particular references to the functionalist organisational perspective, which impacts on attempts to lead or manage the work of the operating theatre. For example, the surgeons in line with Durkheimian notions of professional stratification exercise their autonomy in being able to make last-minute changes to the list order, based on professional knowledge and judgement which cannot be countermanded by the semi-professions. The nursing staff and other semi-professionals demonstrate their rejection of hierarchical systems within their own sphere, preferring a system of local self-allocation of work. Whilst this may be functional to them in terms of meeting the needs of nursing staff in that particular theatre, this study illustrates that this approach is dysfunctional for the larger system in terms of its disruption to shift rostering.

7.18 *Perceptions of role within the operating theatre team*

The concept of 'role' is central to functionalist models of organisation in terms of social stability (Ovretviet 1996), and in terms of output in organisations (Housley 2003). However, the role of the theatre nurse appears not to be well understood even by the nurses themselves (Timmons and Tanner 2005). These findings were supported by the present study in which nurses were able to describe various aspects of their work. However during observation they avoided taking many of the actions they described. One of the most frequently observed activities of the nursing team, although rarely described in interview, was that of

anticipating the requirements for planned surgery. Timmons and Tanner (2005) in particular have highlighted the discrepancy between what theatre nurses report to be their work in interview, and what is observed in the field. In Timmons and Tanner's study, the justification for a nursing presence in theatre as the 'patient's advocate', was the element of reported practice which most starkly diverged from their observations. In the present study, although various broad descriptions of theatre work were given, and the routine nature of such work emphasised, one key aspect was hardly mentioned at all. This was anticipation. In the present study, the majority of the work of theatre nurses and ODPs appeared to centre on anticipation. This ranged from using prior knowledge in an attempt to anticipate the most likely order of the operating list, in order to prepare both patient and equipment, to anticipation of the surgeon's specific needs for the procedure, by using notes made on previous occasions. At the operating table the nurse or ODP watches the surgery closely in order to anticipate the next instrument required. Anticipation was seen to range from considering the immediate needs of the surgeon at the operating table to the appropriate furnishing of the theatre for a particular speciality. The result of the present system was frequently observed to be frustration and exasperation, as even the most experienced staff were unable to meet the challenge of correctly anticipating such a broad range of requirements on all occasions.

7.19 *Staff concepts of group working in the operating theatre*

Schein (1986) describes a single group in the above definition. However, interviews with participants during observation sessions in the present study demonstrated a lack of agreement on whether the personnel of the operating theatre constituted one or more groups. The majority of those questioned during informal interview, considered there to be three groups separated according to profession, each with specialist skills, but dependent on the other groups to provide the environment and conditions in which they could be used.

The findings of the observational survey in relation to the interaction of the professional groups in the operating theatre, revealed a lack of clarity over roles within the group, difficulty on the part of the nursing group to adequately describe their unique contribution, a lack of leadership, which was hampered by the surgeon's ability to make changes to planned work at short notice, and divergent perceptions of what constitutes team working. In addition, communication was poor and considered by some parties to be unnecessary. The second phase of the study supported the first in finding evidence of aggression and disagreement regarding issues of list management. The question of whether or not a group of this description can be considered a team, as envisaged by the policy makers, is discussed in the next section, in which the interactions described above are considered along with the models and philosophies presented in the literature.

7.20 *Team work as a route to efficiency in the operating theatre*

Government recommendations for increasing efficiency in the operating theatre date back to the Lewin report (1970) and remain almost unchanged in the report of the Audit Commission (2003). The recognition of poor list management, and the identified need for improved communication between surgeons and nurses, are themes common not only to these publications, but to many intervening ones (Bevan 1989, Department of Health 2002; Audit Commission 2002, 2003; Association of Anaesthetists of Great Britain and Ireland 2003).

Recent official publications refer particularly to inefficiency within operating theatres, but in common with their predecessors propose the adoption of concepts of team working as the remedy. Examples of these include; The Standing Committee on Post Graduate Medical and Dental Education (UK) (SCOPME), who propose that the professional groups should value the contributions of others, and work in an atmosphere of openness and trust, (SCOPME 1997). They also suggest that in order to ensure multiprofessional working and learning, it should be introduced to Trusts at Chief Executive level, with a focus on the common goal of

meeting the needs of the patient. (SCOPME 1997). The Association of Anaesthetists of Great Britain and Ireland (2003), encourage their membership to make other professionals feel valued as part of a team, as a means of improving morale and aiding retention of staff in theatres. They also highlight the need for improved interprofessional communication to avert errors and improve efficiency. The Audit Commission (2002) recommend that nurses and ODPs should be formally considered to be one team, in order to reduce interprofessional conflict due to perceptions on the part of ODPs of being less valued than nurses.

Arguments for the adoption of such a cohesive multidisciplinary approach are clear within policy and management literature on work groups, including the forthcoming 'Productive Operating Theatre' guidance (NHS Institute for Innovation and Improvement (2008) which continues to focus of the Durkheimian promise of the magnification of individual effort through multidisciplinary (Housley 2003). In addition, team working is considered to promote; stability, a sense of belonging, and group involvement. Literature dating back to the beginnings of research into social relations in the workplace, (Roethlisberger and Dixon 1939) suggests that without these elements efforts towards improved efficiency and productivity must fail. The above publications imply that the multiprofessional working groups in the operating theatre are, by definition, a team, (see also Gorman 1998), and that attention should be focused on improving specific aspects of their working arrangements. However, this study shows a clear lack of consensus on what constitutes team working in the operating theatre, on who can be considered to be included within the team, and the expectations that professional groups have of their colleagues outside their group.

There is an assumption within the literature that the multiprofessional working group in the operating theatre is a team (Gorman 1998; Hudson 2002). However the results of the survey in the first phase of this study clearly shows the frequency of disagreement and aggression concerning list management issues encountered in NHS operating theatres across

England. This appears to contradict any assumption of effective team working, and provides the rationale for the second phase of the study. In the following section the interaction of operating theatre staff in the management of the list, is explored prior to consideration of whether such interaction can be considered to conform to models of team working published in the literature.

7.21 *Defining the work group*

Firth-Cozens (1998) provides an inclusive model of team characteristics, relating to healthcare settings, drawn from the work of Guzzo and Shea (1992) and West (1996). Within this model, team members share clear objectives, their contribution is unique and meaningful, they receive regular feedback on their objectives, they are sufficiently flexible to change and adapt, and outcomes are achieved through the full participation of all members. These concepts will now be considered in the context of the theatre personnel;

7.21.1 *Clarity of objectives*

This study demonstrates a consensus among participants regarding the broad objective of the operating theatre, specifically ensuring a timely and safe transition of the patient through the processes of surgery. In acknowledgement of the influence of systems-based organisations on their component sub-systems, Guzzo (1986) points out that even when a team perceives itself to be a stand alone unit it is at the same time situated in a larger organisation, and therefore its objectives may be imposed from outside. This, as described above, is particularly true of the theatre team, as their work is influenced by the department, and the hospital which, in turn, have their objectives imposed by the government. Even within the theatre, individuals may have different agendas. The survey phase of this study demonstrated a lack of agreement among the respondents regarding shared goals for patient care. Although the existence of a tangible goal is considered important (Maddux 1988; Lafasto and Larson 2001). Adair (1986) argues that this is not sufficient in itself and that the goal must be achieved before team status can be claimed. Recognition of such an

achievement relies on a clear and agreed goal and a means of measuring whether or not it has been achieved. The lack of measurable outcomes is discussed in subsequent sections.

7.21.2 *Unique contribution within teams*

The role of the surgeon and anaesthetist is, it could be argued, specific due to the nature of their work and the restrictions placed upon that work. So too is the role of the anaesthetic assistant, whose sole task is to assist the anaesthetist. For the nurses and ODPs who fulfil the scrub role there is less clarity. The observed work of the theatre nurses and ODPs was mainly that of assisting the surgeon at the operating table, or undertaking the circulating role. The latter role was also seen to be undertaken by healthcare assistants who had undergone further training. Thus it can be argued that although the contribution of theatre nurses and ODPs are important, they cannot be considered unique to their professions.

7.21.3 *Regular feedback*

Neither regular feedback on progress nor performance for staff was observed during the study. Updating of the staff regarding changes to the list was seen on rare occasions, although information was passed on in an *ad hoc* manner, and was never systematically arranged to include all staff members. This information usually concerned alterations to plans which would involve all the staff of the theatre. Similar phenomena are described by Lingard *et al* (2002a) who report the lack of systematic communication in theatres due to the large amount of concurrent activity.

7.21.4 *Full participation in teams*

The concept of full participation in teams is problematic to apply to the operating theatre staff. All persons present contributed to the running of the list, although their work was frequently locally negotiated with peers and self allocated. Therefore it was difficult for the observer to assess their degree of participation without knowing the nature of the role they had agreed to undertake. The avoidance or hiding, described in section 6.3.8, applies particularly to the question of participation. Staff members,

particularly senior staff, were observed to absent themselves from difficult or potentially embarrassing situations, thus removing their participation at a time when they might arguably be most required to supply it. The evidence provided by this study suggests that the activities of the theatre work group does not fit well with the concepts collected by Firth Cozens (1998) as representative of team attributes. However there are other criteria under which team status may be claimed.

Guzzo (1986) argues that a group of individuals are a team when they are perceived as such by themselves and others. Recognition of the membership of a team has also been proposed as a defining characteristic by Gorman (1998). The problem of changing personnel according to shift, means that the composition of the team regularly undergoes slight change, which may be considered to alter the self-perception of the group. This problem may be overcome by a suggestion put forward by Cartwright (2000) which proposes that membership can be fluid and consist of core and ancillary membership. This it could be argued matches the situation in the operating theatre well by taking into account alteration to the immediate team. However, although the core membership may be easy to define, views expressed by participants in the present study indicated lack of agreement on who should and should not be included even in the ancillary membership. Some participants considered that only those who physically appeared in theatre, such as radiographers, to be ancillary members. Others considered those who provide a service, such as sterile supplies personnel, to be included even though they may never enter the perioperative field.

The size of a team has also been considered to be a defining factor (Homans 1951) in that it must be small enough to facilitate face to face communication. The operating theatre team could be considered small enough to satisfy this criterion. However this study has demonstrated that other factors can supervene and create barriers to communication even in a small group.

The problems of satisfying the characteristics set out in the frameworks described above are problematic in the case of the operating theatre work groups, because of the fluidity of the group, the diversity of composition, and the lack of contact outside the immediate period of the list.

Teams have also been described by purpose. Examples include work teams (Cohen and Ledford 1994) whose function is to provide goods or services. It could be argued that this applies to the nurses and ODPs in that they provide a service to the surgeon in order that he or she can provide a service to the patient. The requirement for this type of team to have a stable and continuous membership is not always met. However, such restrictions do not apply to crews. The crew model of group working offers a better description of the arrangements in the operating theatre consisting, as it does, of specialist personnel assembled from a larger pool as described in figure 7.1. This offers a solution to issues of stability of membership in a similar way to concepts of fluidity, even to the extent that any member can be replaced at short notice by another who has had similar training or experience. Because such a system does not allow members to develop an awareness of the skills and limitations or work ethics of individuals within the group, or even to develop shared values, a heavy reliance is placed on check lists and protocols, which Helmreich (1993) describes as characteristic of the airline crew model.

7.22 *Multidisciplinary team working*

The discussion so far has focused on general models of team work drawn originally from industry, but which have been applied in the literature to the context of health care. However, much of the literature employs the term 'multidisciplinary team' to describe the diversity of teams composed of a range of health care professionals. A lack of clarity concerning the exact meaning of this term can be identified in the literature, in which it is used interchangeably with the term 'interdisciplinary' (Leathard 1994). Arguments are also presented regarding the number of professions which need to be included before the terms can be applied. For the purposes of this discussion, three models; 'Unidisciplinary', 'Multidisciplinary', and

‘Interdisciplinary’, will be considered, each of which contain concepts which can be seen to apply to the working arrangements of the operating theatre.

7.22.1 *The Unidisciplinary Model*

Unidisciplinary working, according to Satin (1994), is characterised by the segregation of clinical roles limited interprofessional communication, and independence, rather than collaboration, in goal setting. Although Satin (1994) associates this model with a failure to optimise resources, group arrangements still pursue a common goal. This model may be considered to apply more readily to working practices in the wider field of health provision such as community care. In that context segregation of roles and limited interprofessional communication could be argued to be more a feature of physical distance than disinclination. The characteristics of the model can, nevertheless be interpreted to fit practices observed in the present study, particularly with reference to limited interprofessional communication and role segregation between the surgeons, anaesthetists and non-medical groups, although a difficulty arises in reconciling independence of goal setting in the sense of competing professional agendas demonstrated in this study.

7.22.2 *The Interdisciplinary Model*

In the Interdisciplinary model, common goals are considered to be shared by members of different professions (Satin 1994). A whole team approach to planning is employed and educational background, and role expertise are acknowledged. The key characteristic of this model, according to Satin (1994) lies in the allocation of tasks according to competence as opposed to professional boundaries. This model is inconsistent with the context of the operating theatre on a number of grounds, principally the concept of a whole team approach to planning. No such activity was observed or described during the study, indeed, the meeting of representatives of the professions to address any issue was rare, as indicated in the findings of both phases of this study. In addition, legal and professional boundaries prevent the allocation of tasks on the

basis of competence alone. A shared common goal between the professions could perhaps be more easily claimed.

7.22.3 *The Multidisciplinary Model*

Frattali (1993), proposes a multidisciplinary model which features clinical contribution from several different professions, although professional segregation is maintained. The roles and scope of practice of others are recognised within this model, although a collaborative approach to care planning and provision are not. This model appears, initially, to provide a reasonable match in the context of the operating theatre. However, despite recognition of roles and scope of practice, which represented a point of inconsistency in the interdisciplinary model, and the inclusion of contributions from different though segregated professions, the absence of a collaborative approach to care provision, in the sense of drawing together the skills of the professional groups during surgery and the specific contributions to patient safety before and after, excludes this model as an adequate descriptor of operating theatre activity.

The findings of this research clearly demonstrate practices which correspond to elements of team working as conceptualised in the models described including the multidisciplinary model espoused by NHS policy-makers and professional bodies. However, no single model fully captures the complexity of the work of the operating theatre, or the behaviours observed. This may be because the models were conceived with the wider arena of health provision in mind where health care planning and delivery takes place over a longer period and with a larger team membership. It may therefore be useful to consider the broader concepts of team working in relation to team working in the operating theatre.

7.23 *The relevance of underlying concepts of team work to the operating theatre*

Poulton and West (1993) and Onyett *et al* (1994) identify the following elements required for effective multidisciplinary team work; shared vision, good communication, role understanding, and role valuing. However, Freeman *et al* (2000) found that the perceptions held by

different professions lent different meanings to these elements, and this inhibited effective interprofessional working. For example, in terms of understanding roles, although those who pursue the 'directive' and 'integrative philosophies described by Freeman *et al* (2000), considered that they understood and valued the roles of others in their teams. In terms of the nature of 'valuing', those who adopt the 'directive' philosophy tend to value colleagues in terms of their willingness to assist them in their work. Those who subscribe to the 'integrative philosophy', in contrast, describe 'working with' rather than 'working for', and value exchanges of skills and knowledge. Within this study variation can be seen between the professional groups in terms of what is considered to constitute effective communication, and views on perceived role understanding and valuation, are clearly perceived to be poor by the survey respondents in first phase of this study.

Given the professional diversity of the operating theatre personnel, it is perhaps not surprising that differing philosophies of team working should pertain to each. Freeman *et al* (2000), suggest that the medical profession are most likely to adopt a 'directive' approach, in which one person by virtue of their power and status, directs the actions of others. Whilst examples of this were seen in the findings of this study, the locus of this directive approach lacked consistency. The anaesthetists or the senior nurses were also seen to take charge for certain periods of the list, therefore the source of direction was not seen to reside with one professional group. A limiting factor may be that the managerial powers of one professional group do not extend beyond its own boundaries, thus the medical staff, for instance, cannot actively manage the nurses or ODPs. A closer conceptual fit, for theatre workers, can be argued for the 'elective' approach Freeman *et al* (2000), in which professionals work autonomously, referring to others when they feel the need. Insularity of practice is a key feature of this model and distinctness of role between the three main groups can be argued to preclude the need to negotiate boundaries. Brevity of communication is a characteristic of this model, and examples of this are demonstrated throughout the findings of the

study. An explanation for the adoption of the 'integrative' and 'directive' philosophies of team work by specific profession as described by Freeman *et al* (2000), could be argued to link directly to functionalist modes of social stratification, particularly in conceptualisations of whether non-medical colleagues are 'working for' or 'working with'. The findings of this study indicate, perhaps unsurprisingly, the adherence to these models by the medical staff and their abandonment by the non-medical staff.

As in the case of the team models described in earlier sections, the concepts presented in this discussion offer at best a partial fit for operating theatre personnel, although an argument can be made for the 'elective' approach to be the most representative. However, even though the 'elective philosophy' described by Freeman *et al* (2000) may reflect the organisation of theatre work to some extent, its insular approach and resistance to integrated communication, can hardly be regarded as ideal in a fast-paced clinical environment, which is characterised by change to originally proposed courses of action.

One of the main problems, for this study, in locating operating theatre group working arrangements within the frameworks of team working presented in the literature, is the lack of consensus demonstrated, within the observation sample, regarding the nature of their own working group. Some participants perceived a single group with a multidisciplinary membership, whilst others described three separate groups corresponding to the three main professional groups represented. The latter was the more popular view expressed in interview, and evidence supporting suggestions of professional distancing has been presented in the findings of this study. If, as the evidence presented suggests, the working groups of the operating theatre do not fully conform to team models developed for more general use, the question remains as to how their work interaction can be adequately described.

One key concept of team working was both observed, and described by all grades and professions within the sample, and that was the concept of interdependence.

7.24 *The theme of interdependence*

The concept of interdependence of the professional groups was acknowledged by all participants in their descriptions of group working arrangements in the operating theatre. Although the first phase of this study revealed a perception amongst the respondents that their role was not understood by their colleagues in other professional groups, interviews in the second phase revealed an appreciation within the professional groups of the contribution of their colleagues outside those groups. This is consistent with Schein's (1986) definition of a team, specifically: a group who are interdependent due to the nature of tasks carried out by its membership. The results of this research identify interdependence as the link which holds the professional groups together, during the immediate perioperative period. Although interdependence can be seen as a defining concept of the theatre team, within a functionalist analysis the team members are additionally interdependent on and closely integrated with all other elements of the system. Thus the externally imposed workloads and time constraints put in place to meet the system's needs, provide at the same time a source of conflict between individuals and that system. Theatre list overruns have been shown in this study to place a particular strain on the team. This could be argued to be at least partly due to the requirement for members who currently form the theatre team to perform other functions within the system at other fixed times. The descriptive account of the working arrangements of the operating theatre presented in this thesis identifies a link between conflict, and the working arrangements described, particularly in relation to the achievement of externally imposed work load and time constraint.

7.25 *The myth of the multidisciplinary team in the operating theatre*

There is little empirical evidence to suggest that team working is effective in any aspect of health care provision (Zwarenstein and Reeves 2000,

McCallin 2003). Healey *et al* (2004) point out that although teams are seen as the foundation of good surgical practice and optimum outcome, there is no valid measure for this, nor any consensus on how this could be achieved. Hudson (2002) argues that the government focus on interagency working has assumed that once structures are established team working practices between traditionally segregated groups will automatically fall into place. Hudson states that this is contrary to the established sociological wisdom, that professions are "essentially self-interested groupings", and points out that there is a difficulty for those outside the medical profession to legitimately question action based on specialist professional knowledge (Hudson 2002; McDonald *et al* 2005). In addition to this, there is evidence from the psychology literature which indicates that multidisciplinary teams are bound to fail, when there is too much diversity in the team (Jackson 1996). Jackson argues that increased diversity, which she defines in terms of power or hierarchical status, reduces communication spread within the team and rather than encouraging equality of value in terms of contribution can lead to dominance of the highest status members. Jackson's work describes multidisciplinary teams in the industrial setting, but the arguments can be applied to the operating theatre in terms of the professional, cultural, class and educational diversity which could be argued to exist in that context. Many of the findings of Jackson's work are borne out in this study, particularly in relation to communication, and professional separatism. An additional aspect of this line of analysis is that the diverse elements of the operating theatre 'team' only convene once or twice a week, at the time of the operating session and at that time there is little communication. The survey phase of this study indicated the widespread lack of attendance at multidisciplinary meetings at which issues could be aired. Thus the chance of finding common ground is reduced. The activity and interaction of theatre staff observed in this study is not adequately explained by existing models of industrial team working, although many related concepts can be seen to apply.

7.26 *The relationship between operating theatre team work and conflict*

The majority of participants in this study see themselves as belonging to one of three separate but interdependent teams, who bring unique skills together to achieve a single main purpose. The research presented in this thesis demonstrates a particular characteristic of operating room teams to be the short term nature of their existence. With the exception of the surgeons, all other members are convened from a pool, and become a theatre team for the duration of the immediate perioperative period. At the end of that time the team is dissolved, and may or may not consist of the same membership on future occasions. Thus, they have only a short time to develop and use the concepts associated with industrial models of team work. The findings of this study have enabled the construction of a diagrammatic representation of the operating theatre team model, which is presented as figure 7.1. Thus the group could be considered to more closely resemble a crew following the airline model as described by Sexton *et al* (2000), but lacking the essential leadership component. The aggression and disagreement between members of these groups identified in the initial phase of this study, can be seen to be linked to frustrations over incidents or events which cause delay, within the time constraints of the operating list. These events can be seen within the findings of the second phase of the study, to be caused either by failure of equipment, or failure to anticipate a particular requirement for surgery. The aggression reported could be argued to result from several contributory factors. The crew-like nature of the team means that relationships and shared values cannot develop in the way that they might in a long-term team. Professional separatism is thus encouraged, communication is reduced and guidelines, which by their very nature can only cover broad requirements, are preferred. Pressures imposed externally, such as time and workload, are in place to meet system needs. Adherence to these constraints is necessary because of commitments in other parts of the system and because, within the NHS, centrally collected data reflecting performance in relation to time are the chief means of reviewing the efficacy of system components and identifying needs, reported delays are a potential source

of conflict within the team and between the team and the superordinate system.

7.27 *Conclusion*

The functionalist ideal of multidisciplinary teamworking in the operating theatre as a route to reduced fragmentation of planning and decision-making between the professions, enhanced team output, and the efficient meeting of the needs of the system has yet to be realised. The evidence of past failure exists in nearly forty years of system redesign, which has not brought the desired change. In the course of this study, several contributory elements to the on-going interprofessional conflict within the theatre team have been identified. The nature of the work group in the operating theatre has been described not as a traditionally stratified multidisciplinary team following an industrial model as envisaged by policy-makers, but as a crew of similar structure to those found in the aviation industry. However the functional leadership style espoused by commercial aviation and observed in the present study, has been argued to be insufficient in the context of the operating theatre because of its focus on dealing with immediate tasks at the expense of long term planning and resource allocation. The findings of this study support the contention that the functionalist concern with role has led to a lack of recognition, in the formulation of policy, that the simple juxtaposition of what Hudson (2002) has described as essentially self-interested parties is not in itself sufficient to realise the potential of multidisciplinary working. In addition to the bringing together of professionally stratified technical skill and knowledge, there must also be a system of leadership and management within the team which it is argued may differ in hierarchical structure to that based on professional standing.

The issues of management and organisation in the operating theatre which have formed the focus of the majority of the interprofessional conflict reported in this study, have not been resolved by current approaches to team organisation. The causes of conflict have never been the concern of the functionalist analysis which has guided redesign of systems within the

NHS for many years, and thus have remained unexplored. It is suggested that alternative arrangements for leadership and management should be considered not only with a view to improved organisation of work, but also as a means of formally identifying sources of conflict as a basis for changing practice. Action research is therefore proposed as a means of analysis and the implementation of change.

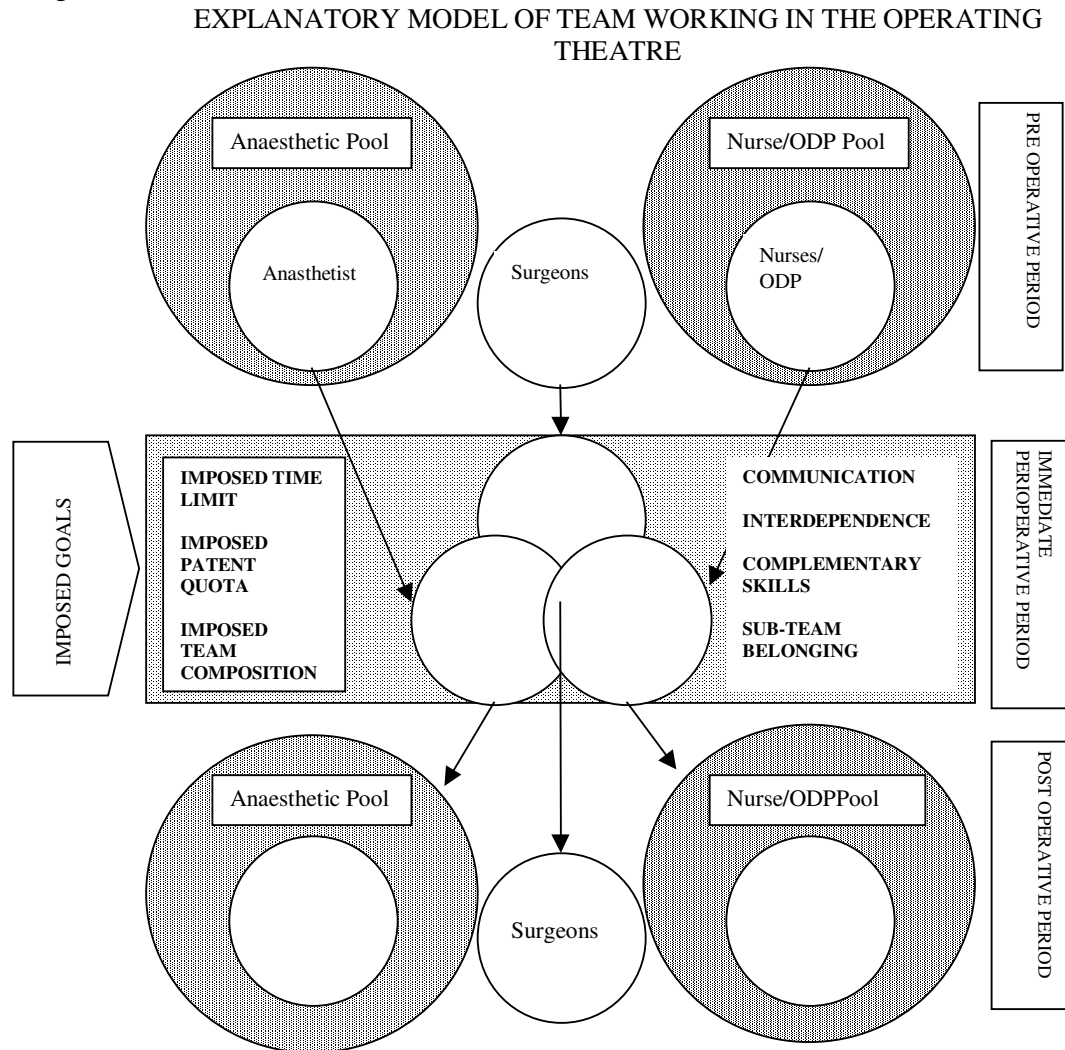
Originally used to investigate intergroup problems in the United States (Lewin 1946), action research has now become a descriptive term for a style of research characterised by three main features, specifically: its democratic nature, its use of participation, and its simultaneous contribution to social science (Carr and Kemmis 1986). The findings of this study have identified the problem areas in operating theatre teamwork, and the impact of inter group conflict on working relationships. It is suggested that progress can only be made through the collaborative identification and implementation of solutions on the part of researchers and participants, through the systematic process of monitoring and reflection which action research offers (Meyer 2000).

Action research has been criticised for its focus on local problems, which could be argued to raise questions regarding the generalisability of results. However, Waterman *et al* (2001) in their extensive guidance on the implementation of action research in the NHS setting, draw attention to its potential for providing theoretical insights as well as practice development, which they argue may in fact be generalisable to other settings.

The findings of this study have highlighted the difficulties involved in obtaining participation from all members of the multidisciplinary team, particularly in the case of surgeons. This was particularly evident in the present study when attempting to convene focus groups. This could be considered a potential problem in the case of action research in the operating theatre, and particularly where research is led by nurses. It is suggested therefore that involvement is sought from local

multiprofessional bodies convened as part of the NHS Research and Development Strategy (Department of Health Research and Development Directorate 2006), or from external agencies, as a means of promoting the credibility of action research to professions which have traditionally had a more positivist perspective.

Figure 7.1



In the pre operative period, nursing and anaesthetic team members are drawn from the nursing and anaesthetic pools.

In the immediate perioperative period they join the surgeons to form a collaborative group, the key feature of which is interdependence. This interdependence arises due to the distinct nature of the contribution of each group, and because the group only exists in that particular form for the duration of the operating session.

The lack of perceived need for inter group communication leads to unreliable anticipation of need, particularly between the surgeons and nursing sub groups.

This leads to delay and a subsequent reduction in the probability of achieving the externally imposed objectives. This can result in aggression and conflict over proposed list management strategies. At the end of the session the nurses and anaesthetists return to their respective pools to await future deployment.

CHAPTER EIGHT

CONCLUSION

The questions addressed in this thesis arose initially from the personal and professional interest of the researcher, in the practice-based problem of conflict in the operating theatre, and were subsequently refined in the light of research on conflict and team working reported in the literature. During the period in which the present study has been undertaken, a steady increase in interest in conflict and team work in the operating theatre has been evidenced by the number of publications on these themes seen in academic journals. This has provided an indication of the importance with which working arrangements in the operating theatre are viewed, particularly in relation to effective working (Lingard *et al* 2002a; Moss and Xiao 2004), and patient safety (Helmreich 2000; Espin *et al* 2006). However, the research presented in this thesis differs from previous studies in terms of its scale, and its consideration of the relationship between its central themes, which have been considered separately in previous studies as explorations of conflict (Kaye 1996; Pape 1999; Hamlin 2000), or as describing aspects of team work (Taylor and Campbell 1999; Firth-Cozens 2004; Lingard *et al* 2004b).

This chapter sets out the conclusions drawn from the findings of the present study, and from the experience of undertaking it. The immediate and wider implications of the results are discussed, and recommendations for future research are made. This thesis has addressed its central themes by responding to the initial research questions set out in Chapter One. These questions now provide a framework with which to organise the first part of this chapter. Subsequent sections present conclusions regarding the contribution of the research to service delivery and organisation, the efficacy of the methodological approach taken, and recommendations for future research.

8.1 *The main questions of the thesis*

This thesis has considered two main questions. Firstly, the impact of conflict on the work of the operating theatre, and secondly the way in which the work of the operating theatre can be described with reference to models of team working.

The first requirement in addressing the question of the impact of conflict on the work of the operating theatre, was to establish whether the conflict reported in small scale and anecdotal reports in the international literature, applied to NHS operating theatres in England. The extent to which these reports applied to NHS operating theatres in England, was described using data from both phases of the study. Actions described under the heading of conflict in the literature include; shouting and verbal abuse (King 2004; Rosenstein and O'Daniel 2006), more subtle manifestations such as blame apportionment and undeserved credit-taking (Hamlin 2000; Dunn 2003), and simple difference of professional opinion regarding the optimum management of the operating list (Booij 2007). For the purposes of this thesis, a distinction is drawn, between conflict of professional view as to how a patient should be treated or how the list should progress, and aggression or 'high tension events', of the type described by Lingard *et al* (2004b) which are considered negative and damaging to professional relationships (Booij 2007). Nearly 70% of respondents to the survey reported perceived disagreements between surgeons and nurses/ ODPs. Aggressive behaviour was also reported, with 53% of all respondents claiming to have received aggression from consultant surgeons with nurses reporting the highest perception of aggression.

8.2 *The main sources of conflict in operating theatres in England*

Whilst a connection between disagreement and aggression is suggested by these findings, the ethnographic phase of the study did not support it. Disagreement over issues connected with list management were observed during the study, and were supported by the results of the survey which revealed that the most common sources of disagreement between the professional groups on a daily basis were overruns, reported by 90.2% of

respondents, changes in list order 88.1%, and availability of theatre time 86.9%. However, aggression between consultant surgeons and nurses/ODPs, as defined in the questionnaire, was most commonly seen to result from perceived lack of anticipation of the requirements of the surgeon on the part of nurses/ ODPs. This resulted in tensions, which sometimes proceeded to outbursts of aggression.

It can therefore be concluded that disagreement was observed, between the professional groups as to whether the order of the list should be changed, and about whether a list should overrun, and the availability of time. However these did not all result in aggressive acts as defined in the questionnaire. The aggressive acts, observed in the ethnographic phase of the study, were mainly related to perceived wastage of time. The effect of time pressures as a source of stress in the operating theatre have been recognised (Espin *et al* 2001), although the manifestations of this stress in the form of aggression have been demonstrated in this study. Other forms of aggression, such as purposeful ignoring, appeared not to be connected to any other activity.

8.3 *The main professional groups involved in conflict in operating theatres in England*

The results of the survey demonstrated that all professional groups represented in the sample were involved to some extent in situations of conflict. However, in agreement with the findings of Rosenstein and O'Daniel (2006) the consultant surgeons and nurses were the two groups most frequently reported to be in situations of conflict. In the ethnographic phase of the study, although situations of high tension were seen, the expected degree of conflict and disagreement was not observed. The reason for this was not explained by the findings, although it could be argued that the perceptions of conflict described in the survey are not accessible to the observer. The possible 'taboo' nature of being in a situation of conflict may mean that it is not readily reported to an outside party such as a researcher, particularly if the researcher is perceived to be in close liaison with the management. An alternative consideration is that

the survey might represent an exaggerated account of conflict. However, the close match between the survey results from each area within the sample, and the results of similar studies suggest that this is unlikely.

8.4 *Exploration of the interaction of the professional groups in the immediate perioperative period, specifically in relation to the antecedents of conflict.*

As described above, the present study demonstrates that one of the antecedents of aggression was a perceived lack of anticipation of the requirements of surgical procedures. This was due, in part to a lack of direct communication between the professional groups. Nurses were observed to rely on sources of information which were incorrect, or out of date. Even though the professional groups who were to be involved in the surgery, only met for a short time immediately before the first case, the lack of communication between the groups was not due to lack of opportunity, but was seen to be due to a lack of perceived need. These findings do not correspond to those described by Lingard *et al* (2005a) in their study of Canadian operating room nurses who, in common with all other professional groups welcomed the formalisation of the discussion of cases before the commencement of surgery. In the present study, the observed lack of information sharing extended to the anaesthetists, one of whom had to request important information regarding the airway status of a patient due to be operated on later in the day. Her concerns were dismissed by surgical colleagues as not their immediate concern, and the conversation escalated into a more heated debate. The attitude of surgeons in this respect has been interpreted by anaesthetists as representing a lack of appreciation of the nature of their work (Kinzl *et al* 2005) and has contributed to anaesthetist's perceptions of not being valued by their surgical colleagues.

Therefore although surgeons and nurses have been identified within this study as the main actors in episodes of conflict, resulting from lack of communication similar behaviour was observed between surgeons and anaesthetists. The specific difference between the examples reported in

this research was that nurses and surgeons were seen not to communicate about the immediate business of the operating list because of a lack of perceived need, even though the opportunity frequently presented itself. In the case of the surgeons and anaesthetists, a perceived need for communication existed on the part of the anaesthetists, but not on the part of the surgeons. In the work of Lingard *et al* (2005a) described above, the anaesthetists specifically raised the issue of the need for particular information, well in advance of the surgeon's arrival in theatre on the day of operation, in order that appropriate patient care could be planned. The findings of the present study serve to confirm that communication which has been considered an important concept of team working (Lingard *et al* 2002a, 2004a; Moss and Xiao 2004, Sexton *et al* 2000) represents a particularly weak point in interprofessional working in theatre.

8.5 *The impact of conflict on the work of the operating theatre*

This study provides evidence that conflict in UK operating theatres results largely from unaddressed issues, originating from differing perspectives of the professional groups which comprise the theatre team. The impact of conflict can be seen in increased tension which further divides the parties, reducing the process of communication further. The case is made in this thesis that research and policy recommendations which dominate the literature on operating theatre practice have largely derived from a functionalist perspective. The limitations to implementation of policies derived from this perspective are inherent within the well rehearsed academic criticisms. Namely that functionalism is not principally concerned with examining causes of conflict, the uncritical acceptance of which has, it could be argued, maintained the *status quo* for such an extended period. It is further argued that failure to recognise the functionalist perspective embedded in much of the literature and policy recommendations in this field has led to a failure to critically address the limitations of these approaches to addressing deep-seated problems.. The specific problems identified within this thesis, are that historic lack of concern with the causes of conflict have meant that difficulties

experienced by individuals and professional groups in realising personal or profession-orientated goals whilst aiming to achieve a shared objective, have persisted in spite of system or pathway redesign. Lack of perceived need for communication or leadership within the team has contributed to further failures to meet the needs of team members to conduct the work of the operating theatre efficiently under time constraint. This in turn has lead to further frustration and aggression. Certainly there have been revisions of working practice and structure of teams but this falls foul of traditional functionalist notions that redesign is the same as problem-solving. The failure of new measures to enhance operating theatre team working can be seen in the retrospective review of policy presented in this study, and this has contributed to a lack of faith in management to overcome central problems, thus fuelling further recalcitrance and conflict.

8.6 *The relevance of models of team work presented in the literature to management of the operating list during the immediate perioperative period.*

Various conceptualisations of team work were located in the literature (Guzzo 1992; Satin 1994; Cohen 1997; Firth-Cozens 1998; Arrow *et al* 2000). However, although many of the concepts of team working apply to the way in which work is organised in the operating theatre, the best fit was with the structure of airline cabin crews. There is little continuity or opportunity to develop as a group due to the short-term nature of each team. A diagrammatic representation of the theatre team is presented in figure 7.1 indicating its membership, composition and duration. The findings of this study identify that the theatre 'team' consists of three subgroups broadly divided by profession, but with the nursing/ ODP subgroup participating in all three. These groups are held together by their common main goal, and by their interdependence on each other in order to achieve it during the immediate perioperative period. Thus, it can be argued that concepts such as interdependence, valuing contributions of others, and commonality of goal, are relevant to the

work arrangements of the operating theatre, whilst others including communication, interchangeability of skills and self identification as a group are viewed as less important. The preference, demonstrated in this study, of the professional groups to remain as separate entities make arguments which present operating theatre personnel as a unitary group (Gorman 1998; NHS Modernisation Agency 2001, 2002; The Association of Anaesthetists of Great Britain and Ireland 2003) difficult to sustain. One specific characteristic of operating teams demonstrated in this research and described in section 7.20, is their transitory nature. With the exception of the surgeons they are convened from a pool of staff for the duration of the operating list, in a membership configuration which may not be repeated on subsequent occasions. It may therefore be more useful to consider them in terms of the crew model described by Sexton *et al* (2006). If this argument is accepted, those involved in management and education may wish to turn their attention to the issue of leadership which although key to the crew model, was accorded a low priority by many of the participants in the present study.

8.7 *Variation in perception of team work*

The present study has demonstrated that team membership was viewed differently by the different professions, with nurses considering there to be a unitary team and the anaesthetists, surgeons and ODPs adhering to the concept of three separate interdependent groups. These findings are supported by the work of Timmons and Tanner (2004), and Undre *et al* (2006). However although the nurses in the present study reported that they felt part of a unitary team they also described their perceptions of inequality of treatment and lack of communication between themselves and the surgeons. Direct references to team working were made during the observational study, although clear examples illustrating what this concept meant to participants were difficult to obtain. The only exception to this was the nursing staff who considered 'helping out your colleagues' to exemplify team work. This included the taking on of menial tasks by senior staff. This activity is described by Menzies Lyth (1988) as a

manifestation of anxiety in the workforce. However in the light of the findings of the present study it could be suggested that there is a link between the lack of structure and clarity in lines of accountability, and a lack of distinction on the part of theatre nurses concerning the connection between work type and grade. This could be considered to contribute to the evidence of the general lack of clarity expressed by theatre nurses about the specific nature of their work as described by (McGarvey *et al* 2000). However, Timmons and Tanner (2005), in describing the emotional labour of nurses in terms of their observed activity of ‘keeping the surgeons happy’, seem to have found the specific role of the nurse in theatre, as no other group undertake this activity. This behaviour was observed in the present study but it was also seen in reverse, in the example of the surgeon trying to keep the nurse happy whilst changing the list order. This could be considered more in line with pre-empting a complaint and cynical way of obtaining agreement, than a strategy for avoiding possible aggression as in the case of the nurses in Timmons and Tanner’s study.

8.8 *Leadership in team work*

As the study was designed it became clear that leadership had a key role to play in the smooth running of the theatre, and as suggested by Zaccaro *et al* (2001) offered a means of mediation in conflict resolution. If conflict in the operating theatre is to be utilised as a positive resource and means to discussion of problems, the leader has a vital part to play. Examples of leadership were sought out by purposive sampling, but where observed, instances of leadership were short-lived. Leadership transferred from person to person in the course of the operating list rather than staying with an identified individual. This was sometimes due to the number of activities that the leader, in the case of nursing staff, had to undertake. This is supported by the findings of Moss and Xiao (2004) who demonstrated in their study the number of interruptions experienced by the person designated to be in charge of the theatre. It should be noted that in the case of that study, which was undertaken in the United States, there was a designated leader. It was difficult to identify specific team

leaders in the present study, indeed the majority of nurses and ODPs considered that the routine nature of their work rendered the concept redundant. Where leadership was observed it was clearly definable as functional leadership of the kind described by Adair (2006) in which the leader takes on any task that is required to complete the immediate work at hand. This meant that the leader was not only difficult to identify, but constantly occupied with small tasks.

8.9 *The effects of multiprofessional working practices on the management and progression of the operating list in the immediate perioperative period*

This thesis has demonstrated that conflict between professional groups in the operating theatre is widespread across the national sample that conflict is mainly between surgeons and nurses/ODPs, and specifically to aspects of managing service delivery in the operating theatre. The conflict described in this research has been shown to result from current systems of work organisation which fail to take advantage of opportunities for detailed communication regarding the management of cases, relying instead on the professional groups attempting to anticipate each other's requirements on the basis of unreliable information sources, or assumptions made by one group about the other. Difficulties in the rectification of errors in anticipation were seen to heighten the stress caused by time constraints imposed by the wider organisation, and were seen to manifest in aggressive behaviour. Thus it can be concluded, that conflict and associated aggression are related to the way that group working is organised in the operating theatre. Conflict is a result of disagreement over the management of the list, particularly any aspect which reduces the amount of operating time available (imposed from outside) or overrunning that time means that staff who are required elsewhere by a specific time are disrupted.

8.10 *The contribution of this thesis to service delivery and organisation in the operating theatre.*

This thesis offers a contribution to the knowledge base of service delivery and organisation in the operating theatre, which has represented an on-

going concern since the publication of the Lewin report (1970). Central concerns have included efficient use of time, appropriate skill mix, and use of financial resources. More recently the Theatre Modernisation Agency (2001) launched a national programme to address the problem of cancelled operations, due to inefficient use of theatre time, followed in 2002 by the publication of a 'step guide' to improving theatre performance. However, regardless of such initiatives, NHS operating theatres remain under pressure to provide surgery to the patient, in less than eighteen weeks from referral. The efficient working of the professional groups whose job it is to carry out surgical procedures is, it could be argued, key to the realisation of such goals. This thesis describes the current working arrangements in NHS operating theatres in England, and highlights the widespread conflict between separate interdependent groups, which continue to centre on the management of the operating list, and are associated with a lack of perceived need for leadership or communication.

8.11 *Reflection on the methods adopted in this thesis*

The adoption of Layder's (1998) Adaptive Theory has been useful in the present study because it permits a pragmatic approach to the exploration of socially complex practical problems. In addition to the incorporation of prior knowledge to the research, it also allows the inclusion of deductive and inductive elements to the study. This thesis presents the deductive design and analysis of the survey data, which informs the ethnography. The inductive nature of the analysis of the ethnographic data produced theoretical concepts which then allowed a deductive analysis of the whole findings as a whole. The debates surrounding the mixing of methodological approaches have been addressed in Chapter Three. The approach adopted in this thesis, is as described by Patton (1988), in which the differences between the methodological positions are acknowledged whilst maintaining the argument that the assumptions central to these positions are as Patton suggests 'logically independent'. Thus different methods associated with particular paradigms can be mixed in a way that most appropriately adapts them to the research questions. Therefore it

can be argued that the sequential explanatory mixed method design employed in this thesis enabled the production of data appropriate to the complexity of its main questions.

In reflection on the process involved in producing the research presented in this thesis, both limitations within the present study, and opportunities for further research have presented themselves. In the case of the postal survey in the initial phase of the study, it was not possible to know the size of the second sampling frame, and thus assessing the impact of non-responders, was problematic. Whilst acknowledging that the exercise of free will by participants means that a full response cannot be expected, in such designs, a way of collecting data to indicate the representative profile of the sample could have been included. Official figures from government sources could not be utilised in this way, because although numbers of surgeons and anaesthetists are listed, the nursing and ODP workforce is not identified by area of employment. Thus no distinction is made between those employed on wards and other departments. In consideration of the ethnographic phase of the study, data were produced from observations within two London teaching hospitals. Therefore, although the survey results indicate similarity of the experiences of conflict and its antecedents across the country, further ethnographic studies in locations outside London would enable comparisons to be drawn.

8.12 *Suggestions for future research*

This thesis does not argue that the recommendations of policy makers, and advocates of change within the NHS have been without value. Much has been done to identify problem areas connected with operating theatre work. However, it is suggested that the missing element has been a systematic, theoretically driven change agent in which change is introduced through a participative process, rather than managerial imposition. For this reason, action research is recommended as a basis for future work in this field. It is specifically suited to the identification of problems in the clinical area, with the intention of developing and

implementing solutions (Hart and Bond 1995). Use of action research in the operating theatre by Bleakley *et al* (2004) provides encouragement for its continued adaptation in this field, although as discussed in the previous chapter, full participation by representatives of all the professional groups involved must be ensured. The findings of this study suggest that full participation on the part of the surgeons may be difficult to obtain if the research is led by staff perceived as being lower in the professional strata. Therefore consideration could be given to the involvement of high profile external agencies in order to enhance the credibility of research of this type in the eyes of a traditionally positivist medical profession.

The ethnographic phase of this research produced data from the observation of elective operating lists. The researcher's own experience suggests that there is a difference in the way the professions interact in the more stressful environment of the trauma theatre, where the goal is life or limb saving surgery, rather than completion of work in an allotted time. Therefore, it is also suggested that a study of similar design looking at the arrangement of group working and collaboration in the emergency theatre, where no planned surgery is undertaken, is suggested as a topic for future research.

Additional topics suggested by the findings of this research include investigation of the effects of the larger organisation on the immediate perioperative period, and of the effects of leadership and management on the immediate perioperative period, as the subject of an action research study.

The survey results and the literature review have demonstrated that ODPs and nurses regard themselves differently in terms of what they feel they need to contribute. Both parties share a single job description and work to the same terms and conditions. However the nurses perceived a difference in the way they were treated by surgeons, and saw 'keeping the surgeons happy' as part of their job. This view was not shared by the ODPs. If this study was to be repeated, it could be argued that sufficient

evidence of differing views exists between nurses and ODPs to treat them as separate groups. In the present study numbers in the survey sample were too small.

8.13 *Recommendations for Practice*

The findings of this study suggest a number of recommendations which could be applied to the practice setting from which the data were produced, specifically: the function of leadership within the operating theatre team should be revised. Emphasis should be removed from micro management of work load and task supervision, and from the functional leadership role commonly seen during observation. Instead the leadership role should focus on acting as a conduit for communication between the professional groups. In this way the role of the leader as mediator in situations of conflict, particularly in reconciling the opposing priorities of groups and individuals, could provide the key to reducing escalation of frustration and aggression. As Zacarro *et al* (2001) point out, conflict is inevitable, and yet its negative consequences for operating theatre teamwork, may be reduced by a pre-emptive approach. It is therefore suggested that a proactive approach to addressing conflict, and anticipating future conflict by initiating intergroup communication should be made a central element of team leadership in theatres. In addition, it is suggested that the profile of the team leader must be high enough for them to be recognisable by all team members. This presents a particular challenge in short term teams. However, the phenomenon of the 'generally addressed comment' described in the findings of the second phase of the study, which was generally in the form of a complaint or suggestion, is already available to be addressed to an identifiable figure. This simple change could transform an expression of frustration, to the basis for discussion. It is also suggested that leaders should be recruited from the nursing/ ODP staff, as they have the advantage of knowing the availability of staff and material resources within the department, although further research may suggest alternative solutions.

Recognition of the causes of conflict and their relationship to team organisation in theatres can be seen as key to addressing these issues through education, and service delivery planning. Education represents a valuable means of letting the professional groups know the level of information required by their colleagues and facilitating dialogue between the groups. Moving from the widely held concept of the unitary group in the operating theatre and formally accepting the three group model described in this research, allows managers to reconsider the organisation of group working in the operating theatre, and to facilitate the collection, and appropriate dissemination of much needed information between the separate professional groups. Interest in the organisation of work in the operating theatre has grown considerably in recent years, and the continuous introduction of new technology, and different ways of working, and increased patient throughput ensures a requirement for future research to identify safe and efficient means of delivery. Therefore efforts made towards the identification of the causes of conflict in the daily work of the operating theatre, and the recognition of the effects of conflict as described in this thesis, are intended to be of assistance to those involved in management and education in operating departments, who strive to improve the efficiency of service delivery, the quality and safety of the service, and the experience of those who provide it.

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APPENDIX ONE. EXCERPT FROM RESEARCH DIARY

Morning coffee break 10:40 (Week 1)

I have come to coffee in the hope of getting some relaxed conversation about what goes on by way of background and perhaps “building rapport”. As usual, people are locked in conversation in their own groups, or watching the television, which seems to be on all day. People do approach me in the clinical areas. They seem to ask more questions of me than I do of them.

I wonder how long it’s going to be before people stop coming up to me and asking who I am. They mean, “ why am I here?” . I am an outsider in this department and everyone seems suspicious. People think I’m a student nurse! That is probably because of my university ID. The difference in the way you are treated when they think that you are a student to the way you are treated when they know who you are is astonishing. Managing my image has been a problem. I try to appear ‘inoffensive’ as a way of gaining trust. I don’t want to appear threatening. This all went completely wrong this morning. AB [the person through whom I gained access to the site] came into theatre just as a rather grumpy sister was asking me the usual “ are you a student ?” actually she asked what year I was in...unfortunately AB felt she needed to defend me and told the sister that I had finished being a student before she had thought of being one. (I was mortified) The sister was pleasant and apologised, but she hasn’t spoken to me since. I am going to have to make a point of seeking her out and trying to sorting things out. I definitely need her to be on speaking terms. I have also had the other problem. AB sent a sister from another theatre to see me because she wanted to know how we organised something at the trust where I work. That’s no good either. It is going to be much more difficult than I thought to manage my “role” in this setting. Tomorrow I need to speak to AB about keeping a distance somehow, and try and see if they get used to me in the theatres. I think eventually they will just treat me as part of the furniture, I just don’t know how long that will take...

APPENDIX TWO. SEARCH TERMS

TABLE SHOWING NUMBER OF 'HITS' FOR SEARCH TERMS BY ELECTRONIC SEARCH						
Search term	British Nursing Index 1994 to date	CINAHL 1982 to date	EMBASE 1974 to date	King's Fund 1979 to date	MEDLINE 1951 to date	TOTAL
AGGRESSION.TI	99	319	2870	26	4137	7487
THEATRE-NURSING .DE.AND AGGRESSION.AB	0	0	0	0	0	0
ORGANISATION.DE. AND MEDICAL ADJ WORK	0	6	23	1	41	71
OPERATING-ROOMS.DE.AND ORGANISATION.AB	0	35	81	0	73	189
OPERATING-ROOMS .DE. AND STAFFING	0	22	40	0	42	104
HEALTH-SERVICES-RESEARCH .DE AND (OPERATING THEATRES).AB.	0	0	0	0	11	11
DOCTOR.A.B. AND COMMUNICATION.AB.	7	727	1645	170	1962	4511
THEATRE-NURSING.DE.AND COMMUNICATION.AB.	3	0	0	0	0	3
INTERPROFESSIONAL-RELATIONS.DE.AND COMMUNICATION	25	260	0	18	1189	1492
INTERPROFESSIONAL-RELATIONS.DE. AND THEATRE-NURSES.DE	0	0	0	0	0	0
SURGERY-SERVICES.DE AND COMMUNICATIONS. AB	1	0	0	0	0	1
SURGERY-SERVICES.DE.AND ORGANISATION.AB	3	0	0	0	0	3
OPERATING-ROOMS.DE.AND MNAGEMENT.AB.	0	61	265	0	204	530
THEATRE-NURSING DE.AND LIST\$.AB.	1	0	0	0	0	1
THEATRE-NURSING.DE. AND MANGEMENT.AB.	3	0	0	0	0	3
STAFFING-LEVELS.DE AND THEATRES	1	0	0	0	0	1
INTERDISCIPLINARY.TI.AND WORKING.AB	2	53	60	3	89	207
DECISION-MAKING-PROCESS.DE.AND THEATRES\$	3	0	0	0	0	3
DECISION-MAKING-PROCESS.DE.AND SURGEONS\$	1	0	0	0	0	1
(OPERATING ADJ ROOM).DE. AND HISTORY.AB.	0	17	73	0	47	137

APPENDIX THREE. TABLE OF KEY LITERATURE

APPENDIX							
TABLE OF KEY LITERATURE							
Author/ date	Country	Method	Aim	Sample size	Type of study	Results	Conclusion
Undre, S. <i>et al</i> (2006)	UK	Semi-structured interviews	To assess the cohesiveness of the multidisciplinary operating team	$n=24$ Equal representation from surgeons, nurses, ODPs, anaesthetists	Quantitative interview survey	No agreement of what team structure is. Nurses see team as unitary Surgeons see team as multiple sub teams Participants considered their roles poorly understood by colleagues from other professions within the field	The operating theatre working group need not be as cohesive as previously assumed. The dynamics of the operating theatre are not fully understood.
Sexton, J.B. <i>et al</i> (2006)	USA	Survey	Testing of psychometric team work climate scale in operating theatre setting. Provide baseline information on team work climate by professional group. Identify differences in perception of team work by professional group	$n=2,135$ Administered to nurses, surgeons, anaesthetists, nurse anaesthetists, surgical technicians.	Psychometric testing	Surgeons and anaesthetists were more satisfied with medical/nursing collaboration than nurses. Nurses were less positive about speaking up, feeling supported, collaboration, conflict resolution and being heeded	More research is needed to understand the reasons for divergent views on team work. Improvement in the team work "climate" is needed for improved efficiency
Timmons, S. and Tanner, J. (2005)	UK	Ethnography	Exploration of the concept of "Emotional Labour" in the context of the operating theatre.	$n=20$ 17 nurses 3 ODPs	Observation and follow-up interviews	Nurses perceived that one of their roles was "looking after" the surgeons. Described as a "hostess" role this involved two elements: keeping surgeons happy and not upsetting them.	"Emotional labour" performed by theatre nurses was necessary to maintaining "sentimental order" Role not shared by ODPs

Author/ date	Country	Method	Aim	Sample size	Type of study	Results	Conclusion
Lingard, L. <i>et al</i> (2004)	Canada	Observation Quantitative analysis	To describe the characteristics of communication failure in the operating theatre, and classify their effects.	<i>n</i> =94 Anaesthetics Surgery Nursing	Observation	Of 421 communication events observed 129 were categorised as failures	30% of communication fails in the operating theatre. This leads to inefficient working and tension in the work area.
Timmons, S. and Tanner, J. (2004)	UK	Observations and interviews.	To show the origins and effects of professional disputes between theatre nurses and ODPs	<i>n</i> =20 17 Nurses, 3 ODPs, in five theatre departments.	Observation	Demarcation disputes are rare in healthcare. However nurses feel strongly enough to bring this one out into the open	Interprofessional disputes may be more common than originally thought. These may not have come to light because of the inaccessible nature of operating theatres.
Moss, J. and Xiao, Y. (2004)	USA	Observation using data collection and coding tool	To capture communication patterns in the operating theatre, and characterise the information needs of operating theatre co-ordination.	Number of participants unspecified. Approximately 100 hours of observation over 17 days	Observation	Most of the communication was face to face. Co-ordinating equipment was the most common purpose, followed by preparing patients. Scheduling and rescheduling surgery was the least common reason for communication.	Automation of some aspects of patient preparation and equipment management may decrease the number of interruptions to clinicians thus reducing adverse events.
Lingard, L. <i>et al</i> (2002)	Canada	Observation and brief unstructured interviews	Exploration of the nature of communication between operating room team members from surgery, nursing and anaesthetics, to identify sites of tension and impact on novices	<i>n</i> =83 Surgeons (15) Nurses(28) Anaesthetists(10) Novices (30+)	Ethnography	Communication was complex and socially motivated. Each procedure observed had one to four higher tension events, which spread to other participants and contexts.	Team communications in the operating theatre are influenced by recurrent themes. These patterns of communication are passed to novices and thus perpetuated.

Author/ date	Country	Method	Aim	Sample size	Type of study	Results	Conclusion
Freeman, M. <i>et al</i> (2000)	UK	Observation	Exploration of the issues around professional interaction which inhibit or support team working, and the way in which organisational structures and processes impact on team function	Six health care teams: Diabetes team Primary health care team Medical ward team, Neuro rehabilitation team Child development team Community mental health team	Case study	Meanings ascribed to team work can shape nature and content of communication. These meanings can also determine the perceived importance of role understanding, the perceived value of the contributions of others, and whether such valuing is restricted to role tasks or to sharing of professional knowledge.	Where differing philosophies clash, adverse effects on team function can be expected. Effective collaboration can only be achieved through recognition of differences in interpretation of team working and seeking a way in which they can be overcome, to achieve a more dynamic and even approach.
Sexton, J.B. <i>et al</i> (2000)	USA, Israel, Germany, Switzerland, Major world airlines	survey	To survey operating theatre, and intensive care staff attitudes to error, stress and team work and compare with those of cockpit crew.	1033 operating theatre and intensive care staff. 30,000 cockpit crew.	Cross sectional survey	Hierarchical structure was rejected by 94% of pilots, but only 55% of consultant surgeons. High levels of team work were reported by 64% of surgeons and 28% of surgical nurses. Only a third of staff reported errors appropriately	Error, is not dealt with well in hospitals. Discussion is hampered by differing perceptions of team work among members, and a communication barriers associated with hierarchical structure

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	Common goal/objective	Communication system	Particular expertise	Shared responsibility	Collaboration	Interdependence	Defined boundaries	Complementary Skills	Self identification as a group	Valuing of other roles	Co-ordination	Mutual role understanding
Kane 1975b	•		•									
Brill 1976	•	•	•									
Douglas 1983	•											
WHO 1984	•		•		•					•		
Adair 1986	•				•		•					
Maddux 1988	•											
Gawlinski and Grasessle 1988						•						
Marchington 1992			•				•					
Shonk 1992	•									•		
Katzenbach and Smith 1993	•			•				•				
Pritchard and Pritchard 1994	•		•									
Anderson and West 1994	•					•				•		•
Pence and Wilson 1994	•		•					•				
West and Slater 1995	•			•								
Fatout and Rose 1995			•									
Rowe 1996	•				•					•		•
McIntosh-Fletcher 1995			•									
Syer and Connolly 1996	•							•				
Redman 1996	•								•			
Colenso 1997	•								•			
Arrow McGrath Bendahl 2000		•										
LaFasto and Larson 2001	•				•							
Hackman 2002	•						•		•			•

APPENDIX FIVE FOCUS GROUP QUESTIONNAIRE

FOCUS GROUP INTERVIEW SCHEDULE

based on Kreuger (1994)

(Results of interview given in Table 4.2)

Ask all participants to move chairs into semi-circle in order to discontinue all conversation.

Initiate round of introductions

Explanation of the purpose of group

Set finishing time

Explain how responses will be recorded and analysed

Ensure confidentiality

Any questions

Ask if any one needs time to read the questionnaire draft

Initial questions

Terminology:

1. Suggestions for clarification of terminology used.
2. Has any category of staff been omitted?
3. Have any sources of potential disagreement been omitted
4. Have any sources of potential disagreement been included which should not have been?
5. Are the examples of aggressive behaviour sufficient?
6. Are there any items which should be included which would indicate positive or negative perceptions of professional groups?
7. Is the layout clear
8. Would any further instructions or examples be helpful in clarifying how responses should be indicated
9. Are the instructions clear regarding the return of completed questionnaires
10. Comments invited regarding:
11. The accompanying documents

APPENDIX SIX

PROTOCOL**1. Hospitals which meet the criteria for inclusion in the study will:**

Be National Health Service hospitals situated in England.
 Have an operating department.
 Cater for a variety of surgical specialities.
 Cater for a mixed client group.

2. Hospitals which are to be excluded from this study will:

Be private hospitals.
 Situated outside England.
 Cater for only one speciality e.g. Cardio-thoracic surgery or gynaecology.
 Cater for a specific client group e.g. Children, or women only.

3. Personnel who meet the criteria for inclusion in the study will in the case of nurses/operating department practitioners be:

Qualified nurses or operating department practitioners.
 Employed either directly by the Trust in which they work
 Or by an agency.
 The above personnel will work as members of:
 The theatre scrub/circulating team
 The anaesthetic team
 The recovery team
 Or work in all these capacities on a rotational basis.
 Or will hold a managerial or co-ordinating position within the department.

4. Personnel who meet the criteria for inclusion in the study will in the case of medical staff be:

Qualified medical practitioners employed directly by the Trust in which they work.
 Currently in a clinical role in the fields of surgery or anaesthetics, at one of the following grades; House Officer, Senior House Officer, Registrar, Senior Registrar, or Consultant.

5. Personnel who do not meet the criteria for inclusion will in the case of nurses/operating department practitioners be:

Members of staff who do not hold either a nursing, or operating department practice qualification.
 Members of staff who do hold either of the above qualifications but do not work in any of the capacities listed in section 3.

6. Personnel who do not meet the criteria for inclusion will in the case of nurses/operating department practitioners be:

Personnel employed in a locum capacity for a period of less than one month.

7. A total of 64 hospitals will be randomly selected from 8 sampling frames. The sampling frames will correspond to the 8 regions contained within the boundaries of England, as described in the current Directory of Operating theatres and Departments of Surgery, published annually by CMA Medical Data. For each set of 8 hospitals randomly selected from each region, a further 8 hospitals will also be selected using the same process. This second set of hospitals will provide replacements should any hospital in the first set chose not to participate in the study.

8. At each hospital selected by the above process, the principal researcher will identify by telephone, contact persons within the operating department of each hospital, for each staff group, and seek permission to send to those persons the relevant questionnaire pack. A description of the study will be given according to a pre written telephone script. The contact person will be told that participation is purely voluntary and that they are at liberty to withdraw from the study at any time. A written explanation of the study will be included as part of the introductory letter and the contact person, and all potential participants are advised that they must read this information and then sign the attached consent form prior to participation. Consent once given can be withdrawn at any time, and participation terminated without explanation.

9. Reassurance will be given in the accompanying letter, that all information received by the researcher will be treated in the strictest confidence. The original questionnaires will be destroyed after use.

10. Having agreed to receive a questionnaire pack it will sent directly to the named contact person via the Royal Mail.

11. The questionnaire pack for **nurses/operating department practitioners** will contain the following items:

- 1 x questionnaire asking for general background information about the operating department and hospital, size of unit, number of operations carried out per year. This information is to be provided by the contact person and is required once only for each participating department.
- 20 x questionnaires to be distributed to any staff who meet the criteria set out in section 3.

12. The questionnaire pack for **medical staff** will contain 10 questionnaires,

- 2 to be completed by House Officers
- 2 to be completed by Senior House Officers
- 2 to be completed by Registrars
- 2 to be completed by Senior Registrars
- 2 to be completed by Consultants

Questionnaires to be distributed to any staff in the above groups who meet the criteria.

13. Attached to each questionnaire will be the following:

A letter introducing the researcher and outlining the study and its purpose. The letter will also give the date by which the completed questionnaire should be returned, and will give reassurance about confidentiality. Full contact details will be included so that the researcher can be contacted in case of questions or concerns.

A consent form to be read signed and dated by each participant, and to be returned with the completed questionnaire

A pre-paid reply envelope in which to seal the completed questionnaire for return via the departments out going post.

14. Reminders will be sent to those who have not responded after three weeks. Further packs of questionnaires will be sent out as required.**References**

Adamson, B., Kenny, D., Wilson-Barnett, J. (1995) Impact of Perceived Medical Dominance on the Workplace: Satisfaction of Australian and British Nurses. Journal of Advanced Nursing Vol 21 (1) p 95, 172 - 183

Beardwood, B., Walters, V., Eyles, J., French, C. (1999) Complaints Against Nurses: A Reflection of the "New Managerialism" and Consumerism in Health Care? Social Science and Medicine Vol 48 (3) p 363 - 374

Farrell G.A. (1999) Aggression in Clinical Settings: Nurses Views - A Follow Up Study. Journal of Advanced Nursing Vol 29 (3) p 532 - 541

Mardell A. (1998b) How Theatre Nurses Perceive Their Role: A Study. Nursing Standard Vol 13 (9) p 45 - 47

Magennis, C., Selvin, E., Cunningham, J. (1999) Nurses Attitudes to the Extension and Expansion of their Clinical Roles. Nursing Standard Vol 13 (51) p 32 - 36

NCPOD (1997) 1995/6 Report "Who Operates When?"
<http://www.ncpod.org.uk/csumms95.htm>

Yin, R.K. (1994) Case Study Research Design and Methods. Second Edition. Sage Publications: London

APPENDIX SEVEN EXAMPLE QUESTIONNAIRE (ADAPTED FOR NON-MEDICAL STAFF)
QUESTIONNAIRE

2

ALL ANSWERS WILL BE TREATED AS CONFIDENTIAL

Official use only

Thank you for agreeing to complete this short questionnaire

This is a short tick-box questionnaire and should take about 5 mins

The term "**disagreement**" is used here to mean that the parties hold **conflicting views** which cannot be reconciled there and then

Thank you for your valued co-operation

Please tick any box which applies

1. Please state qualification	ODA	ODP	RN	EN
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	2	3	4

2. Please state grade	<input type="text"/>	E.g. E. or MTO2
-----------------------	----------------------	-----------------

3. In what year were you first employed this department?	<input type="text"/>	e.g. 25/02/92
--	----------------------	---------------

4. In what year were you employed at this grade?	<input type="text"/>	e.g. 11/01/99
--	----------------------	---------------

5. In which area do you work most often	SCRUB	ANAESTHETICS	RECOVERY
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	1	2	3

SECTION II

6. Are you aware of any disagreements between any of the following groups in the past 6 months

Please tick any boxes which apply

Surgeon and s	Nurses/ODPs	<input type="checkbox"/>	1
Anaesthetists and	Nurses/ODPs	<input type="checkbox"/>	2
Line Managers and	Nurses/ODPs	<input type="checkbox"/>	3
Senior Managers and	Nurses/ODPs	<input type="checkbox"/>	4

Medical Staff	and	Medical Staff	<input type="text"/>	5
Nurses/ODPs	and	Nurses/ODPs	<input type="text"/>	6
Theatre Staff	and	Ward Staff	<input type="text"/>	7
Other staff, please state if any	<input type="text"/>			8

7. Do you attend meetings with members of the medical staff?	Often	Seldom	Once	Never
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
	1	2	3	4

8. In the past 6 months have you known there to be any disagreements between nurses/ODPs and surgeons over any of the following issues?

PLEASE TICK AS MANY BOXES AS APPLY

	USUALLY DAILY	USUALLY WEEKLY	USUALLY MONTHLY	USUALLY YEARLY
9. AVAILABILITY OF THEATRE TIME	<input type="text"/> 1	<input type="text"/> 2	<input type="text"/> 3	<input type="text"/> 4
10. AVAILABILITY OF STAFF	<input type="text"/> 1	<input type="text"/> 2	<input type="text"/> 3	<input type="text"/> 4
EQUIPMENT	<input type="text"/> 1	<input type="text"/> 2	<input type="text"/> 3	<input type="text"/> 4
12. PRECAUTIONS TO BE TAKEN FOR CERTAIN CASES	<input type="text"/> 1	<input type="text"/> 2	<input type="text"/> 3	<input type="text"/> 4

13. DIFFERENT INTERPRETATION OF HOSPITAL POLICY	<input type="text"/> 1	<input type="text"/> 2	<input type="text"/> 3	<input type="text"/> 4
14. OVER RUNNING OF LISTS	<input type="text"/> 1	<input type="text"/> 2	<input type="text"/> 3	<input type="text"/> 4
15. CHANGES IN LIST ORDER	<input type="text"/> 1	<input type="text"/> 2	<input type="text"/> 3	<input type="text"/> 4
16. AVAILABILITY OF THE SURGICAL TEAM	<input type="text"/> 1	<input type="text"/> 2	<input type="text"/> 3	<input type="text"/> 4
17. SENIORITY OF AVAILABLE SURGEON	<input type="text"/> 1	<input type="text"/> 2	<input type="text"/> 3	<input type="text"/> 4

18. To which of these personnel do you feel professionally equal?

Anaesthetists Please tick any boxes that apply

CONSULTANT <input type="text"/> 1	SENIOR REGISTRAR <input type="text"/> 2	REGISTRAR <input type="text"/> 3
SENIOR HOUSE OFFICER <input type="text"/> 4	HOUSE OFFICER <input type="text"/> 5	

To which of these personnel do you feel professionally equal?

Surgeons Please tick any boxes that apply

CONSULTANT <input type="text"/> 1	SENIOR REGISTRAR <input type="text"/> 2	REGISTRAR <input type="text"/> 3
SENIOR HOUSE OFFICER <input type="text"/> 4	HOUSE OFFICER <input type="text"/> 5	

19. Have you experienced aggressive behaviour from any of the following in the past 6 months?

NB aggressive behaviour can include;

Rudeness
Bullying
Shouting
Malicious gossip
Refusal to speak
Purposeful ignoring

PLEASE TICK ANY BOXES THAT APPLY

Surgeons;	
Consultant	1
Reg/ Sen Reg	2
SHO/ HO	3
None of the above	4

PLEASE TICK ANY BOXES THAT APPLY

Anaesthetists:	
Consultant	1
Reg/Sen Reg	2
SHO/HO	3
None of the above	4

PLEASE TICK ANY BOXES THAT APPLY

Nurses/ODPs	
Line Manager	1
Senior Manager	2
Grade D/MTO1	3
Grade E/MTO2	4
Grade F/MTO3	5
GradeG/MTO4	6
None of the above	7

20. How would you deal with aggressive behaviour from colleagues if encountered?

PLEASE TICK ANY BOXES THAT APPLY

AVOID CONFRONTATION	1
CONFRONT AND SORT OUT PROBLEM	2
DISCUSS PROBLEM WITH MANAGER	3
DISCUSS PROBLEM WITH COLLEAGUES	4

SECTION III

PLEASE TICK ONE BOX ONLY

21. How well do
you feel
medical
colleagues
understand your role?

FULLY	PARTLY	NOT WELL	NOT AT ALL
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4

22. Do you feel that you
have the same goal for
patients in
theatre as
your medical colleagues?

PLEASE TICK ONE BOX ONLY

ALWAYS	MOSTLY	SOMETIMES	NEVER
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	2	3	4

PLEASE DETACH THE ENVELOPE BELOW, SEAL
YOUR
COMPLETED QUESTIONNAIRE INSIDE, AND PUT IT
WITH
THE OUT GOING POST. **NO STAMP IS
REQUIRED**

Thank you for taking the time to complete this
questionnaire.

If you have any questions or require more information please contact me by any of the
following
means:

Telephone
Bleep
email

APPENDIX EIGHT. CO-ORDINATOR'S QUESTIONNAIRE

QUESTIONNAIRE ONE

Thank you very much for agreeing to take the time to fill in this brief questionnaire, which asks for some basic information about your department. Please be assured that the information which you provide will be treated as **highly confidential** and will not be passed on to any third party.
The information will not be traceable back to its source.

OFFICIAL USE ONLY

DATE OF ISSUE

--

1. How many beds does your hospital have?

--

state number

2. How many operations take place within your department on average per year?

--

state average

3. Do you have an Accident and Emergency Department?

please tick

--	--

yes

no

4. Do you have a separate Emergency Theatre?

--	--

yes

no

5. Where are emergency and unscheduled cases (such as returns to theatre), directed to for surgery?

A. WHICH EVER THEATRE FINISHES FIRST

--

B. DEDICATED EMERGENCY THEATRE

|

C. DEPENDS ON NATURE OF CASE

|

6. How are unscheduled cases usually booked?

E.g.

Please complete answer

HOUSE OFFICER LIAISES WITH MOST SENIOR NURSE

	LIAISES WITH	
--	--------------	--

Please tick one box

7. How often are Medical staff, Nurses, ODPs and Managers able to meet together to discuss patient care issues?

WEEKLY

--

MONTHLY

--

AT PRE SET DATES

--

WHEN NEEDED

--

NOT POSSIBLE TO ARRANGE

Please tick box or boxes

--

**8. In the event of a disagreement between
medical and nursing staff/ODPs, who
would usually arbitrate?**

SENIOR NURSE
SENIOR MANAGER
SENIOR ANAESTHETIST
SENIOR SURGEON

OTHER Please state

The term "**disagreement**" is used here to mean
that parties hold conflicting views which cannot
be reconciled there and then

APPENDIX NINE. COVERING LETTER TO PARTICIPANTS

5th December 2001

Dear Colleague,

My name is Richard Coe, I am a Theatre Charge Nurse at The Middlesex Hospital, London, where I have worked since 1986. I have always been interested in the interactions of multidisciplinary teams in our unusual work environment, and I now have the opportunity to conduct a proper study of these. I am registered on the PhD programme at South Bank University, London, and I aim is to conduct a study which will examine in detail the causes of conflict and collaboration in the operating department.

Your department has been randomly selected to form part of a sample of all the operating departments in England. **Your participation in this survey is very important, your responses will be representing many healthcare professionals similar to yourself.** Please complete and return this questionnaire as soon as possible. From start to finish it should take about 5 minutes.

Enclosed is a copy of the questionnaire that includes questions about:

- The professional group which you belong to
- The area in which you most often work
- Your awareness of disagreements between professional groups
- Your awareness of disagreements within professional groups
- Situations which may result in conflict

Please take a few minutes to complete this questionnaire and return it in the enclosed stamped addressed envelope provided. It would be very helpful to have your completed questionnaire returned this week if possible.

Your responses are confidential. No individual information will be used or released to your employer, or any other party. If you have any questions or concerns, please don't hesitate to call me at Main Theatres, The Middlesex Hospital on 0207 636 8333 Ext 3032. Or by email at

Please read the enclosed description of the study, and if you would be willing to participate, **PLEASE SIGN AND RETURN THE ATTACHED CONSENT FORM WITH YOUR QUESTIONNAIRE**

Thank you for your help

Sincerely

Richard Coe R.N. BSc MSc.

APPENDIX TEN. CONSENT FORM

CONSENT FORM**Title of Project:** Interprofessional working in the Operating Theatre

Name of Researcher: Richard A. Coe

Please initial box

1. I confirm that I have read and understand the information sheet dated 25/01/04 (version 2.) for the above study and have had the opportunity to ask questions.

☐

2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason

☐

I agree to take part in the above study. By taking part in an **interview**

Name of Participant

Signature

Date

THIS CONSENT FORM IS STRICTLY CONFIDENTIAL. NO INFORMATION ABOUT YOUR PARTICIPATION IN THIS STUDY WILL BE PASSED ON TO ANY OTHER PARTY.

Please note that the researcher, as a registered nurse, is bound by the terms of the Nursing and Midwifery Council Code of Conduct (2002), and is therefore bound to ensure the safety of patients and clients. This includes the reporting of anything which creates an unsafe environment for the patient. In the unlikely event of such a report being made it will be to a line manager, and will **not** appear in any part of the data being collected for this study.

Researcher

Signature

Date

APPENDIX ELEVEN. INFORMATION FOR ALL PARTICIPANTS

INTER DISCIPLINARY WORKING IN THE OPERATING DEPARTMENT

You are being invited to take part in a research study. Before you decide it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

Thank you for reading this

What is the purpose of the study?

There is plenty of research available which has considered the nature of working relationships between professional groups, but there is little to date which considers this in the specific context of the operating department. In the light of Government initiatives which propose role redesign and the blurring of traditional professional boundaries, and with proposals being considered for collaborative multidisciplinary responses to issues arising from the introduction of the European Working Time Directive, review of interprofessional relationships seems timely. The purpose of this study is to identify how situations of conflict can arise out of the varied agendas of professional groups, and in particular between surgeons and nurses.

The answers to these questions may help us re-evaluate our working practices and help us to make the most of our working relationships.

Why have I been chosen?

Your views and experience are being sought in order to help explain situations which have been observed during the course of the study.

Do I have to take part?

It is of course up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time and without giving a reason.

What do I have to do?

If you decide to take part, the multidisciplinary team in which you are working will be the subject of an observation study. Interactions of staff will be noted, but no names or identifying location will be recorded in the notes taken. You may also be asked to participate in an interview, where the interviewer will ask you if your experiences can help explain situations which have been observed. You will not be asked to name other individuals, or discuss anything you would rather not comment on. The interview will normally be recorded on a cassette for typing up later. The tape and notes will be strictly confidential, and no third party will have access to them. The typed transcript will not name any person or location. All the above will conform to data protection and privacy requirements.

If you decide at any point of the interview process that you have changed your mind about participating, you will be free to withdraw at any time.

If you decide you would rather not participate, simply find the observation timetable on display in your coffee room, and tick the box marked "Please do not observe during this session" for the operating session in which you will be involved. Once again the notes taken during the observation session will be completely anonymous.

Is there any risk involved in taking part?

No, and because your responses are confidential, no one will be able to link your responses back to you.

What will happen to the results of the research study?

This study is the second phase of a 2 part study. The study will be completed by 2005, as part of a research degree. The results will be written up in a thesis to satisfy examination requirements, and sections of the results may be published in professional journals. In either case there will be no reference to persons or places by name.

Who is organising and funding the research?

This survey is part of a PhD study, which is being undertaken at City University, London. It is being supported by University College London Hospitals Trust, Department of Education. The researcher is not being paid to undertake this study.

Who has reviewed this study?

The Research Ethics Committee which reviewed this study was London Multicentre Research Ethics Committee (MREC).

Contact for Further Information

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED] read this information.

APPENDIX TWELVE. LETTER TO INITIAL CONTACT

5th December 2001

Dear

RE: SURVEY QUESTIONNAIRE FOR PhD STUDY

Thank you for agreeing to take part in this survey. As requested I enclose a pack of questionnaires for 20 of your nurses and ODPs to complete. I should be very grateful if you would arrange for them to be distributed to any of the above staff, at any grade (permanent or agency). All questionnaires come with pre-paid addressed envelopes for their return.

I have also enclosed a single side questionnaire which consists of questions designed to give a broad description of your department against which to consider the data supplied by your staff. I should be grateful if you or one of your senior staff would complete this.

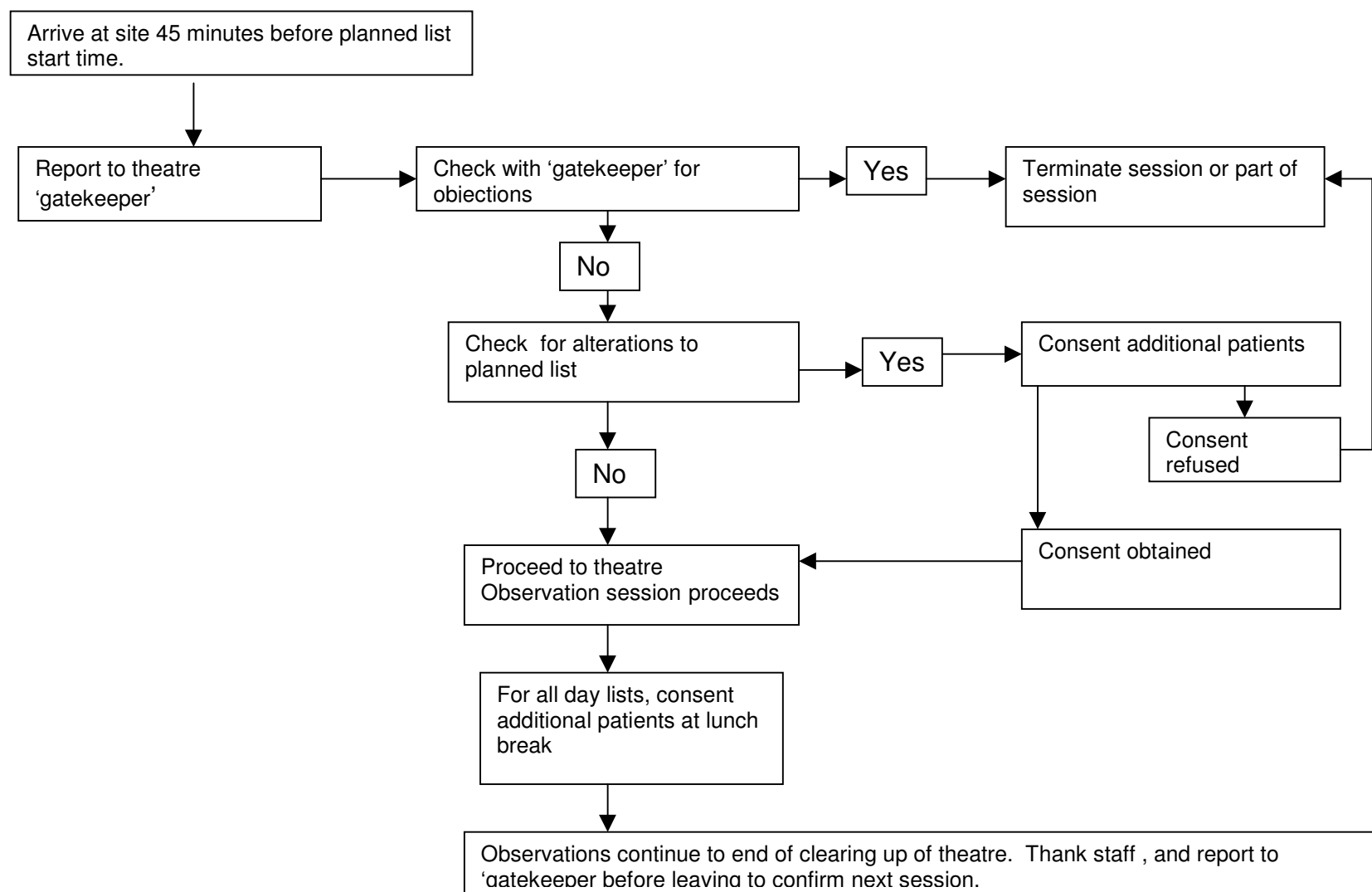
All responses are confidential, they will not be traceable back to their source, and they will be destroyed after use. Comparisons will not be drawn between individual hospitals in this study, although differences between regions may be described.

If you have any questions or concerns, please feel free to contact me at Main Theatres, The Middlesex Hospital, London on [REDACTED] or by email a [REDACTED]

Yours sincerely

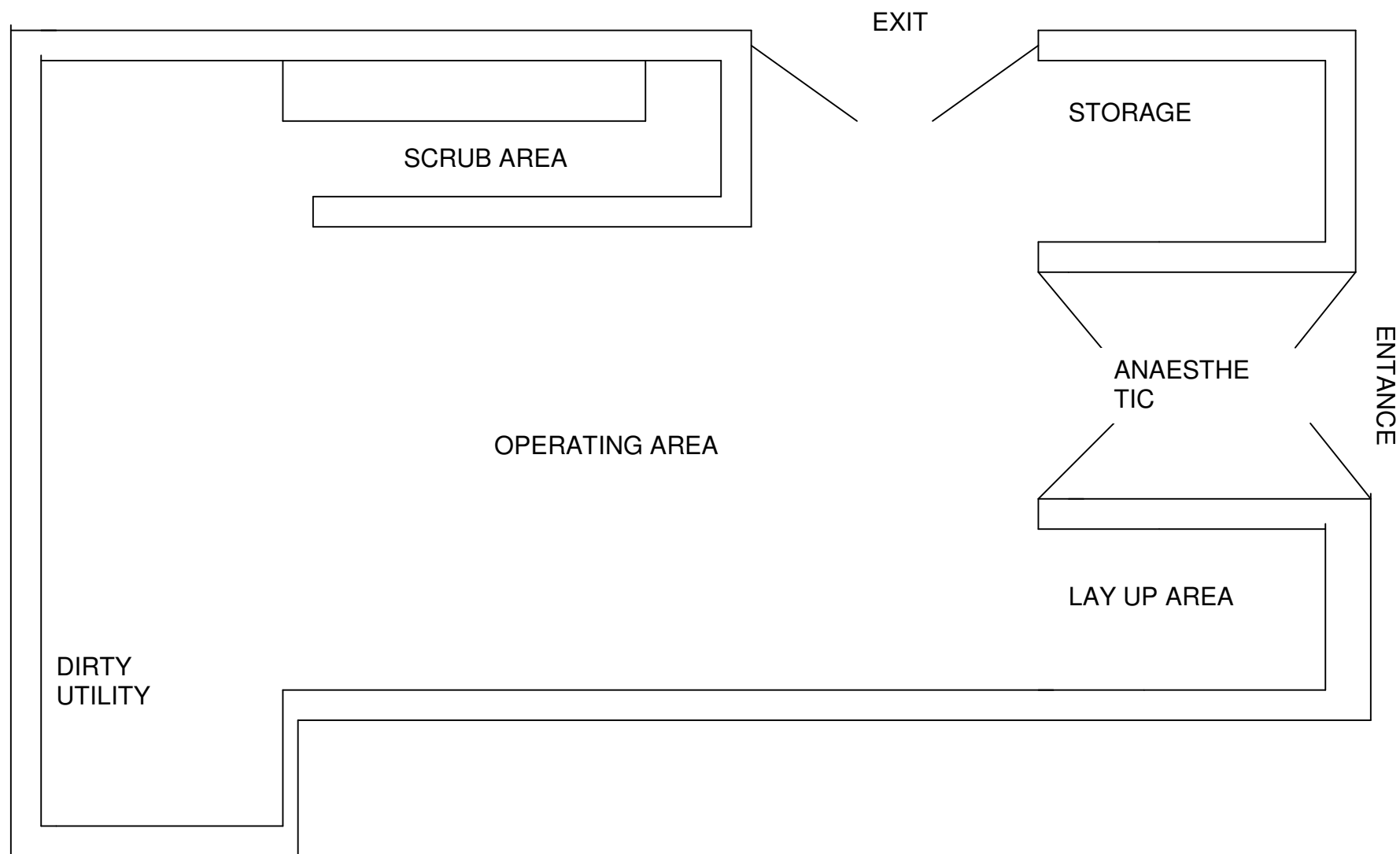
Richard Coe R.N. BSc., MSc.

APENDIX THIRTEEN FLOW CHART OF TYPICAL OBSERVATION SESSION



APPENDIX FOURTEEN

FLOOR PLAN OF AN OPERATING THEATRE TYPICAL OF THOSE WHICH FORMED THE OBSERVATIONAL FIELD



APPENDIX FIFTEEN CODING SHEET EXAMPLE

Obs Notes CODING UNDERLINED	Memos
<p>1. 030905</p> <p>2. Staff prepare theatre for the afternoon list. All are engaged in pushing trolleys and equipment in and out of the theatre. There is little communication and it is hard to see who, if anyone, is in charge. <u>RO/P</u></p> <p>3. I ask AE1 what is happening, she takes me over to a list to show me.</p> <p>4. I ask when things will get underway. She says that she hasn't seen the surgeon yet. <u>WFS</u> I follow her into the laying up area. She continues to get equipment sorted into piles corresponding to each of the cases on the list. <u>RO/P</u></p> <p>5. I ask if she will be doing the first case.</p> <p>6. AE1: I should think so, AE2 is on a late so she should do the last one. I hope that there will be someone to circulate for her as I need to be away by 5 today. <u>KT</u></p> <p>7. I ask if that is the end of her shift.</p> <p>8. AE1: supposed to be but we always over run on a Wednesday. I am fed up with staying back, but what can you do? <u>PL</u></p>	<p>This appears to be a routine part of any list. Staff seem to gravitate to tasks that must be done prior to the commencement of the list. This work does not seem to be formally organised in that no plan is followed that is obvious to the observer. No allocation of work (in the theatre) no plan is referred to, no reporting of tasks completed. Yet each person is employed in preparations.</p> <p>Waiting for the surgeon to appear/be ready to start.</p> <p>This specific preparation of instruments and supplies for the cases follows a system seen in other sessions. The instrument sets are placed on trolleys. Other items which will be needed such as blades and sutures, are placed near or on their respective trolleys. Folders or card systems are consulted to check that surgeon specific requirements are met for each case. (specific sutures or instruments).</p> <p>Needing to be away by a time. (Expressed by nurses and anaesthetists mainly in other sections)</p> <p>Seems to display a powerlessness over the inevitable overrun.</p>

APPENDIX SIXTEEN. OPEN CODING LIST

Preparing the environment	PE
Routine Work [applies to every list regardless of speciality]	RW
Preparing Specific items for specific cases	P Spec
Avoidance [of giving information]	AV1
Avoidance [of situations]	AV2
Avoidance of [confrontation]	AV3
Avoidance of [direct approach to surgeons eg asking them for info]	AV4
Surgeon Dependent Activity [e.g. waiting for the surgeon before sending for patient]	SDA
Assumptions about what will happen based on prior experience	Ass
Hoping for the best	HFTB
Lack of Power to make Changes	PL
Waiting for something to happen	WSh
One rule for us, One rule for them [perception of different rules for different professional Groups/ perceived different treatment dependent of professional group]	ORFU
Surgeons make clear an expected level of service, e.g., equipment availability To be called when the patient is ready, level of assistance required	SLE
Distancing from problems	DST
Assisting each other in preparations	Asst
Assisting within group [nurses assisting nurses/ surgeons assisting surgeons]	Ass Wg
Assisting between groups [nurses assisting surgeons/ anaesthetists vice versa]	Ass Bg
Reacting to an unanticipated need [not having enough drapes, missing equipment]	RUN
Reacting to unanticipated need [which could have been anticipated]	RUN1
Reacting to unanticipated need [which could not have been anticipated]	RUN2
Reacting to wrong equipment prepared for surgery	RU WE
Requesting assistance [from any party]	Req As
Undirected comment/ direction/complaint [communication is not directed to A specific person, instead a general announcement is made]	Und C
Direct comment/ instruction or request. [made directly to the person concerned Requiring response or action from that person.	DC
Remaining in group [staff groups remain in tact when communicating/ entering Or leaving theatre/ going to tea.]	RIG

Single Group Action. [eg Anaesthetist sends for patient without reference to Any other party] <i>NB Not the same as single group activity [activity engaged in By only one professional group. E.g. cleaning/ laying up trolleys/ ordering Instruments =nurses only. Making incision and conducting procedure =surgeons Only</i>	SGA
Direct questioning of surgeon [about needs for surgery/ when to send.]	DQ
Leading. [Taking the lead/ co-ordinating activities for the list or for a Specific period]	L
Maintaining role boundaries [Correct roles observed during procedure eg Only the scrub person hands out instruments from the trolley]	MR
Loosening of role boundaries [Allowing the nurse to put the dressing on/ Allowing the surgeon to help him/her self from the instrument trolley	LRB
Blaming [for major or minor issues within and between cases]	BL
Moving the list forward [Any activity aimed at progressing the list Getting the surgeons to theatre/sending early for next patient Hurrying the surgeons up by reminding them of time]	MLF
Routine work done by any grade of nurse regardless of hierarchical position	AWAG
Widening the decision making process. [including several persons in the Decision making of any grade -usually within group]	WDM
Tone Adoption. [The general tone adopted by the surgical team, usually set By the person who takes charge of the case, or by the demeanour of the surgeon E.g. if the scrub nurse is takes a professional stance and inspires confidence The rest of the team fall into role. If the surgeon does not acknowledge the Scrub person, the rest of his/her team follow suit]	TA
Routine checks of equipment for safety [This can range from a cursory glance To having to sign a formal document]	Rou Ch

APPENDIX SEVENTEEN. SCHEMATIC REPRESENTATION OF SAMPLING SYSTEM

